R
11
N57
v.183
no.5
cop.2

LIBRARY
FEB 10

THE BOSTON
Medical and Surgical
JOURNAL

OFFICIAL ORGAN of THE MASSACHUSETTS MEDICAL SOCIETY and of THE NEW ENGLAND SURGICAL SOCIETY

$5 per Annum, 15c per copy
Vol. CLXXXIII, No. 5

THURSDAY, JULY 29, 1920

Published weekly in Boston, at 126 Massachusetts Avenue

CONTENTS

ORIGINAL ARTICLES

CONCERNING SO-CALLED ENCEPHALITIS LETHARGICA WITH SPECIAL REFERENCE TO ITS SEQUELAE. *By J. W. Courtney, M.D.*, Boston.

LETHARGIC ENCEPHALITIS. *By George Arts Neuhaus, M.D.*, Denver, Colorado.

DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE GENITOURINARY TRACT. *By Arthur H. Crosbie, M.D.*, Boston.

THE MASSACHUSETTS MEDICAL SOCIETY

AFTER DINNER SPEAKING AT THE ANNUAL DINNER OF THE SOCIETY, JUNE 9, 1920.

EDITORIALS

BOTULISM.

VOCATIONAL TRAINING IN HOSPITALS.

BACTERIA AS A FACTOR IN FUTURE WARS.

For complete table of contents, see first text page.

UNIVERSITY OF OKLAHOMA SCHOOL OF

Two Books by Burton-Opitz

A TEXT-BOOK OF PHYSIOLOGY

Dr. Burton-Opitz has produced a text-book of physiology which stresses the *application* of the science in bedside medicine. There are six features that stand out perhaps above the others: 1—The logical manner in which the subject matter is arranged. 2—Brevity and simplicity, making easy of comprehension those subjects which have always been stumbling blocks to the student. 3—The numerous outline sketches, because nothing is more to the point than simple diagrams. 4—A thorough summary of to-day's physiologic literature. 5—The strong emphasis given to the physical aspects of physiology. 6—The inclusion in many places of brief clinical references, tending not only to inject interest, but to give the study a truly practical value.

Octavo of 1185 pages, illustrated. By RUSSELL BURTON-OPITZ, M.D., PH.D., Associate Professor of Physiology at Columbia University, New York. Cloth, $7.50.

ADVANCED LESSONS IN PRACTICAL PHYSIOLOGY

This work deals with the *laboratory side* of the subject and, in a sense, is a companion volume to the author's "Text-Book of Physiology." The experiments included are those which can be conveniently performed with simple apparatus. The lessons begin with experiments on muscle and nerves, and gradually lead up to the more involved. Those experiments which require complex apparatus and which may be more conveniently displayed to a large number of students are embodied in the demonstrations. The lessons are so arranged that each one will require about three hours, and each demonstration one hour, making a total of one hundred and eighty hours—the usual number of hours allotted to such work.

Octavo of 238 pages, illustrated. By RUSSELL BURTON-OPITZ, M.D., Associate Professor of Physiology at Columbia University. Cloth, $4.00 net.

W. B. SAUNDERS COMPANY Philadelphia and London

Entered at the Post-office at Boston as second-class matter.

The First Ounce of

Compound Stearate of Zinc

THE remarkable healing properties of the Zinc derivatives was discovered as early as 1784, but it remained for the laboratories of McKesson & Robbins in 1886 to produce Compound Stearate of Zinc, in the form of a white powder. When they first put C. S. Z. on the market it was used in hospitals as a surgical dusting powder.

But as the value became more evident throughout the medical profession, it began to be used as household first-aid. Then it was used in the nursery because it prevented chafing and skin irritation. It also found use in certain skin diseases. The fact that, being water-proof, it coats the skin, with a moisture resisting powder, is one of the reasons for its great value.

Naturally since McKesson & Robbins were the first to manufacture C. S. Z. in commercial quantities, and since they have kept up their standard of purity—the surest way to get pure, dependable C. S. Z. is to specify the original McK & R, on your prescriptions.

Samples on receipt of professional card

McKESSON & ROBBINS, Inc.
Manufacturing Chemists
Established 1833 91 Fulton Street, New York

ARLCO-POLLEN EXTRACTS

FOR CUTANEOUS TESTS AND TREATMENT

offer a variegated list of Pollen Extracts for both diagnosis and treatment of

HAY FEVER AND SEASONAL ASTHMA

Each pollen is prepared in concentrated solution, and supplied **separately** in an individual capillary tube for diagnostic purposes. This to permit of scientific **differential diagnosis** as to the exciting pollen or pollens with each patient.

When the chief causative or dominating pollen in a given case has been determined, proper **treatment** by specific desensitization may be secured through our accurately standardized treatment sets—corresponding respectively to the various pollens represented individually in the different diagnostic tubes.

No **mixed** pollen solutions for either diagnosis or treatment will be supplied.

THE ARLINGTON CHEMICAL CO.

Yonkers, New York

Ready for Use!

A CAREFULLY prepared and alkalinized solution of Arsphenamine "606" furnished in a form available for instant use, in the office or at the bedside.

SOLUTION ARSPHENAMINE-LOWY S.A.L.

The physician breaks off the ends of the ampoule, attaches the rubber tubing, inserts the needle, and injects. No mixing, no waiting, no bother.

Fully approved by the A. M. A. Council of Pharmacy and Chemistry, and prepared under license by the U. S. Public Health Service.

Interesting literature sent on request

LOWY LABORATORY, Inc., 361 Plane St., Newark, N. J.

TRADE MURDOCK'S MARK

Nufood

a diet of

Milk — Eggs — Malt Extract

samples on request

Try it — Doctor

GONOSAN "RIEDEL"

To ALLEVIATE PAIN, to PROMOTE DIURESIS and to PROTECT the membrane of the urethra, especially THE POSTERIOR PORTION—these are the important objects of the treatment of acute cases of Gonorrhea.

The entire urinary tract should be influenced by means of proper internal medication. Local injections alone will not be sufficient.

This is the rationale of GONOSAN.

Samples and literature at your disposal.

RIEDEL & CO., Inc.

Bush Terminal Building 5 BROOKLYN, NEW YORK CITY

Massachusetts General Hospital
CONSULTATION CLINIC

Days: Tuesdays and Fridays (Holidays excepted).
Admitting Hour: 2.00 to 2.30 P.M.
Patients will not be admitted without a letter from their physician referring them to the Consultation Clinic.
Admission Fee: $10.00.
X-Ray and Laboratory Tests extra

Departments represented:

Medicine	Surgery
Genito-Urinary	Orthopedics
Syphilis	Skin
Pediatrics	Neurology
Nose and Throat	Eye and Ear

After the examination is completed a written report will be sent to the doctor with the diagnosis and suggestions for future treatment.

This Clinic is for the benefit of families with small incomes and to assist physicians in cases of doubtful diagnosis. Diagnosis has become so complex and expensive in obscure and difficult cases that its cost has become a heavy burden to those who, nevertheless, are able to pay something.

DR. RICHARD C. CABOT
DR. DAVID L. EDSALL
DR. CHARLES A. PORTER
DR. FRANKLIN G. BALCH
DR. EDWARD W. TAYLOR,
DR. FREDERIC A. WASHBURN, *Secy.*
General Executive Committee.

Metchnikoff

brought a new gospel for the prolongation of life —a clean colon.

Metchnikoff had his own theories as to the accomplishment of this desirable state, and many others have been advanced, but none have been found to be more satisfactory than "a wineglassful of Pluto Water before breakfast each morning."

Make a test of the next case of obstinate intestinal stasis that presents itself. You'll be converted.

PLUTO

FRENCH LICK SPRINGS HOTEL CO.
French Lick, Indiana

Current Literature Department

ABSTRACTORS.

GERARDO M. BALBONI, M.D. GEORGE G. SMITH, M.D.
LAURENCE D. CHAPIN, M.D. WILLIAM D. SMITH, M.D.
JOHN B. HAWES, 2D, M.D. LESLEY H. SPOONER, M.D.
EDWARD H. RISLEY, M.D. WILDER TILESTON, M.D.

MEDICINE.

A NEW METHOD OF TREATING REMOTE MANIFESTATIONS OF GONORRHEAL INFECTIONS.

STERN, M., AND RITTER, I. S. (*Med. Record*, Jan. 31, 1920) conclude that:

1. The intravenous injection of sodium iodide has produced no untoward effects upon the patients so treated and is, therefore, a good office as well as hospital procedure.

2. The results obtained in acute gonorrheal arthritis, orchitis, and prostatitis demonstrate its value in remote manifestations of gonorrheal infections.

3. An entire dose of the drug was injected into the tissues in one patient. He complained of a great deal of pain for about one hour. There was neither edema nor redness a short time following the injection. The drug, therefore, even if not introduced entirely into the vein, will not cause any sloughing.

At this writing, a conclusion as to the manner in which the iodide produces its results has not as yet been determined upon; but in three classes of gonorrheal infection, herein alluded to, the behavior of the patients while thus treated, was in general quite different from that to be expected without it, and reduced their hospital stay about one-third.

[E. H. R.]

OBSERVATIONS ON THE COLLOIDAL GOLD REACTIONS WITH CEREBROSPINAL FLUID.

KELLERT, E. (*Am. Jour. of Med. Sci.*, February, 1920) draws the following conclusions:

1. The colloidal gold reaction is useful as an additional or confirmatory test.

2. It is of greatest value in the syphilitic diseases of the central nervous system, especially tabes and paresis.

3. The test may serve to differentiate between tuberculous and other forms of meningitis.

4. The reaction is correct in approximately 80% of cases.

5. Cerebrospinal fluid contaminated with blood in small quantity frequently gives reactions in the luetic zone.

6. Positive results, unconfirmed by other tests, are of only slight value.

7. The Wassermann reaction and the cytological examination of the cerebrospinal fluid are of greater value than the colloidal gold test. [E. H. R.]

DIFFERENTIAL DIAGNOSIS BETWEEN THE PAINS OF TABES DORSALIS AND THOSE OF FOCAL INFECTION.

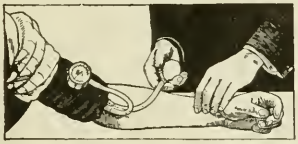
DORANCE, A. M. (*Med. Record*, April 10, 1920) reports a case previously treated unsuccessfully for syphilis, with complete relief of symptoms following extraction of abscessed teeth. [E. H. R.]

FITS AND FALLACIES.

MACROBERT, R. G. (*Jour. A. M. A.*, April 10, 1920) in a very clearly stated article, shows that in the recent mobilization of the American army there were 12.8% rejections for epilepsy in the first 13,481 rejections. He laments the vast array of useless surgi-

(Continued on page vi.)

SANBORN
Blood Pressure Outfit



Thorough accuracy, extreme durability, quick and dependable determination of systolic, diastolic and pulse pressures—these are guaranteed the user of the Sanborn Outfit.

Approved by the U. S. Army and Navy, insurance companies and thousands of physicians throughout the country.

Aneroid gage; washable armband, 42 inches long; Ceylon rubber bag, 5 × 9½ inches, reinforced by durable fabric; specially made release valve; essential parts double strength; packed in case of selected leather.

PRICE — $17.50

May we not send you an outfit for trial in your practice? No advance payment required. Just send your request on your business stationery.

Made, guaranteed and sold direct to physicians by

Sanborn Company Makers of Scientific Instruments
79 Sudbury St., BOSTON 14, MASS.

Seasonal and Specific Pollens

Diagnostic and Treatment Solutions of the various Pollens used in the treatment of Hayfever.

Timothy	Ragweed
Red Top	Corn
Daisy	Goldenrod
Dandelion	Rose
Orchard Grass	June Grass
Sunflower	and Various Others

Above Carried in Stock at All Times

Also: Food Proteins
Epidermal Proteins
Bacterial Proteins

E. F. MAHADY COMPANY
671 Boylston St. (Near Copley Sq.)
Boston, Mass.

"For Urethritis and Fresh and Suppurating Wounds."
Acriflavine GH and Proflavine GH

Antiseptics of rare potency and safety
Non-irritating, non-toxic. Solutions keep well in amber bottles

Used by the foremost physicians and surgeons, and in the leading hospitals and clinics, throughout the United States and Canada, "with most gratifying results." Fast becoming the standard treatment for acute and chronic urethritis. Excellent results obtained by irrigation with 1-3000 solutions. May also be applied locally, or by intramuscular or intravenous injection. Highly diffusible.

ACRIFLAVINE GH and PROFLAVINE GH were the first diamino-acridinium derivatives to be manufactured in America; their purity and strength are guaranteed superior to any similar product sold here.

Furnished in 5 and 25 gramme vials, and one gramme ampoules
Order direct or through your druggist
Price Lists and Literature on Request

HEYL LABORATORIES, Inc., 437 Barretto St., New York City

Horlick's

The Original

Is always clean, safe and reliable and protects your infant patients against the uncertainty and risks attending the summer milk supply, which bears such close relation to infant mortality at all times.

Avoid Imitations
Samples Prepaid Upon Request

The Preferred X-RAY Meal With Barium Sulphate Write for Literature

Horlick's Malted Milk Co.

RACINE, WIS.

Summer Bargains

Now is the time to pick up some excellent bargains in used X-Ray and Electro-Medical Apparatus at a fraction of its retail price. All apparatus is in good working condition and will be delivered and installed free of charge. Following is a partial list:

X-Ray Apparatus

3 Interrupterless X-Ray Transformers
3 Scheidel Western X-Ray Coils
1 Horizontal Fluoroscope
1 Hogan Silent Transformer
Miscellaneous lot of Gas X-Ray Tubes
3 Dental X-Ray Coils

Therapeutic Apparatus

1 Model "F" Campbell High Frequency Coil
1 Model "E" Campbell High Frequency Coil
1 Model "I" Campbell High Frequency Coil
1 Model "E" Thompson-Plaster Coil
1 Strong Ovington High Frequency Coil
1 Victor Multiplex Sinusoidal Machine
1 Victor Sun Arc Lamp

Call for a demonstration

Clapp Anderson Co.

Suite 431
120 Boylston St. Boston, Mass.

(Continued from page iv.)

cal procedures to which these unfortunates are subjected in order to find a cause for the disease. There is no gross lesion as the cause of epilepsy in the majority of cases. In 845 necropsies at Craig Colony on the brains of epileptics gross lesions were reported in 60%, but the lesions were rarely of a nature to possibly cause epileptic convulsions. A tabulated list is given, which emphasizes this point. Previous head injury is not as common a cause as is commonly supposed. Operations on the gastro-intestinal tract, the author believes, are a product of fallacious reasoning from erroneous premises, and convulsions should be no indication for exploits on the bowel. The article is of considerable interest in negativating some pretty well established theories. [E. H. R.]

PATHOLOGY.

An Unrecognized Pathway for Bacterial Invasion of the Respiratory Tract.

Winternitz, Smith and Robinson (*Johns Hopkins Hosp. Bull.*, March, 1920) believe that the rich plexus of lymphatics with the submucosa of the trachea supply the necessary pathway for certain bacterial invasion of the respiratory tract, which hitherto could not be explained.

They summarize their investigations as follows:

The submucosa of the trachea contains a rich plexus of lymphatics, prominent everywhere and devoid of valves. At the bifurcation of the trachea, anastomosis occurs with similar plexuses in the bronchi, and this phenomenon is repeated throughout the region of the cartilage-bearing bronchi. At the bifurcation of the trachea, as well as of the bronchi, there is drainage to the lymph glands and anastomosis with periarterial and peribronchial lymphatics. When the lymphatics are injected, the larger portion of the material is diverted at these birfurcations, but continuity of the lymphatic system in the tracheal and bronchial submucosae is demonstrable.

Pneumococci introduced by needle puncture through the skin into the lumen of the trachea or by insufflation, provided the insufflating catheter damages the epithelium of the trachea, spread by way of the lymphatics to the lung. The lymphatics of the submucosa of the trachea, then, afford a direct pathway of infection to the lung. Although this lymphatic system provides a pathway for infection, it may also serve as a protective mechanism against pulmonary infection, for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph glands. [J. B. H.]

The Effects of Deficient Dietaries on Monkeys.

McCarrison (*Brit. Med. Jour.*, Feb. 21, 1920) discusses the results of his dietary experiments on monkeys, with particular reference to gastro-intestinal disease.

His conclusions are as follows:

1. Dietaries which are deficient in vitamines and in protein, and at the same time excessively rich in starch or in fat, or in both, are potent sources of disease, and especially of gastro-intestinal disease.

2. An excess of fat, in association with deficiency of "B-vitamine" and protein and superabundance of starch, is peculiarly harmful to the organism.

3. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria; especially is this the case when deficiency of vitamines and protein is associated with an excessive intake of starch.

4. Since life cannot be sustained in the monkey Macacus sinicus, much longer than 100 days on a

(Continued on page viii.)

We confidently court critical, clinical, cascara comparisons

F. E. Cascara Aromatic S. & D. for instance

A true fluid extract—a pound of carefully tested well-seasoned cascara bark, q. s. aromatics and a pint of our special solvent.

Compare it dose-for-dose with any other palatable cascara; a logically self-determined specification will result. Your druggist can supply our product.

SHARP & DOHME

NOW ENTIRELY AMERICAN

Made by the Original Processes

Sajodin

PALATABLE and EFFICIENT
IODIN MEDICATION

Especially for Prolonged Use
as in

Arteriosclerosis

and when Iodides disagree

Adalin

THE SAFE and DEPENDABLE
HYPNOTIC and SEDATIVE

For Treatment of the Common Forms
of

Insomnia

and for Nervousness

VERONAL and VERONAL-SODIUM

The Well-Known Hypnotics

Sold Exclusively by

WINTHROP CHEMICAL COMPANY, Inc.

189-191 Franklin Street New York, N. Y.

Less than 10 Seconds

You can file or find a Case History in less than 10 seconds with the "Y and E" Direct Name Filing System.

This is especially desirable when the hospital is calling on the 'phone or several patients are waiting.

You have very little time for office detail and every record should come instantly to hand when wanted.

Send for our System Service expert to explain (without charge) our Direct Name System.

"Yawman and Erbe" Mfg. Co.

68 Franklin St., Boston 5, Mass.

Factories and General Offices at Rochester, N. Y.

Branch Stores or Agents in Principal Cities.

(Continued from page vi.)

dietary almost wholly devoid of "B-vitamine," it would appear that complete absence of this vitamine from the food is of less practical importance from the point of view of the production of disease in human beings than its subminimal supply. Complete deprivation of "B-vitamine," especially if there be also imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamine will lead, in like circumstances, to slow dissolution and disease.

[J. B. H.]

SURGERY.

Fibrinuria: Occurrence in a Case of Carcinoma of the Kidney.

O'Conor, V. M. (*Am. Jour. Med. Sci.*, May, 1920) gives brief summaries of the 25 reported cases in the literature in which fibrin occurred in the urine independent of blood or chyle and adds the detailed findings of a case, thoroughly worked up, with autopsy findings, at the Peter Bent Brigham Hospital. The condition is rare but of considerable interest. The case reported was one of carcinomma of the kidney.

[E. H. R.]

Roentgen Ray Study of the Great Vessels.

Martin, C. L. (*Jour. A. M. A.*, March 13, 1920.), in a well-presented and carefully prepared article, containing numerous diagrams and case reports, sums up his conclusions as follows:

There has in recent years been an ever increasing tendency to use the roentgenogram in the diagnosis of syphilitic aortitis. That it is a very valuable adjunct to the clinical findings there can be no doubt; but I wish to emphasize the importance of a conservative interpretation of a widened shadow of the great vessels.

Arteriosclerosis, hypertension, chronic endocarditis, a high diaphragm, or a dilated pulmonary artery may give a similar picture, and it is perhaps wiser for the roentgenologist to suggest the diagnosis of aortitis only in those cases that show a localized prominence at the base of the ascending aorta.

It is the exception rather than the rule to find a single cause underlying increased supracardiac dulness.

The occurrence of syphilitic aortitis, arteriosclerosis, hypertension, and a high diaphragm in the same patient is not so very uncommon. [E. H. R.]

Malignant Disease of the Lungs.

Pfahler, George E. (*Ann. of Surg.*, April, 1920) presents an article which it is well to read in connection with Janeway's paper on mediastinal tumors. Pfahler states:

1. Primary malignant disease of the lung is rare, but presents rather characteristic appearances roentgenologically.

2. Metastatic malignant disease of the lung is common, and should always be looked for in connection with advanced malignant disease.

3. A roentgen examination of the chest should be made in every case of carcinoma of the breast referred for operation or roentgentherapy.

5. Metastatic carcinoma of the lungs may be one of four types: Nodular, mediastinal with infiltration about the roots, general, miliary infiltration, or pleuritic.

5. Greater attention to details in these studies will lead to earlier recognition of the disease.

6. Roentgentherapy can be expected to prolong life and give some improvement in symptoms, and perhaps occasionally the life may be prolonged sufficiently to consider it a cure

New England Laboratories

Clinical *Analytical*

Markarian Building *175 State Street*

Springfield — Massachusetts

Director, George L. Schadt, M.D. Telephone River 868-W

WITH a competent, well-trained personnel of laboratory technicians, a director trained in clinical laboratory diagnosis, and with an equipment as complete as it has been possible to obtain, the New England Laboratories are prepared to perform with promptness, accuracy, and dependability any test or reaction that may be requested.

Fee lists and further information will be gladly furnished upon request.

PROTECT YOUR PATIENTS

AGAINST. . . .

Colds
Influenza
Pneumonia

USE SHERMAN'S NO. 38

WRITE FOR LITERATURE

MANUFACTURER OF BACTERIAL VACCINES

G. H. SHERMAN, M.D.
Detroit, Mich. U.S.A.

B. B. CULTURE

Virtually a specific in intestinal infections—adult or infant.

A trial prescription will convince you of the value of this treatment.

B. B. CULTURE LABORATORY
INCORPORATED
YONKERS, NEW YORK

Anusol
HEMORRHOIDAL
Suppositories

If we were to use the superlatives which physicians all over the world have applied to Anusol Suppositories during the last twenty years, we would most certainly be accused of making exaggerated claims.

So we are not going to do it.

But we will gladly send you a sample.

And let you see what some physicians say about them.

MADE IN U.S.A.
FURNISHED TWELVE IN GREY BOX WHITE, RED AND BLACK LABEL AT BEFORE-THE-WAR PRICE.
SCHERING & GLATZ, INC. NEW YORK

SUGAR FREE MILK

TO meet a needed diet in illness we have prepared a Sugar-Free Milk. It is principally for the use of patients suffering from diabetes, but also advantageous in the treatment of obesity, gout, etc. It is intended for use not only as a beverage, but to be served with tea, coffee, chocolate, and to be used in the preparation of custards, milk soups, and other foods in which milk takes a part.

This milk is processed under our laboratory control, and put up in one-half pint bottles, capped with crown seals and Pasteurized in the Bottle. It is prepared in *double* strength, and is to be diluted before using with an equal quantity of water, vichy, or other mineral waters. Through concentration and Pasteurization it is made capable of holding its condition for a week or more. It contains no preservative and is guaranteed under the Pure Food and Drug Act of June 30, 1906.

The Connecticut Agricultural Experiment Station in their Bulletin No. 213 refers to Sugar-Free Milks as follows:

"These preparations have a distinct value in diets where carbohydrates are restricted, as in the case of those suffering from diabetes."

Their analysis of our Sugar-Free milk is as follows:

Water	83.3
Ash	0.8
Protein (N x 6.38) . . .	6.4
Nitrogen Free Ext. . .	0.2
Fat	9.3
Calories per 100 gms. . .	110

We are prepared to make delivery direct in Boston and suburbs and by express to distant points.

The price is 25 cents per bottle (*double strength*), $1.25 per case of half-dozen bottles. Samples will be sent to physicians upon request.

D. Whiting & Sons 570 Rutherford Ave., Boston, Mass.

The Management of an Infant's Diet

DIARRHEA

The importance of nourishment in intestinal disturbances that are so common during the warm weather is now recognized by physicians, and it is also appreciated that the nutrition furnished must be somewhat different than the milk modification usually supplied to the normal infant.

Food elements that seem to be particularly well adapted, mixtures that are suitable to meet the usual conditions, and the general management of the diet, are described in our pamphlet —"The Feeding of Infants in Diarrhea"—a copy of which will be sent to any physician who desires to become familiar with a rational procedure in summer diarrhea.

MELLIN'S FOOD COMPANY, BOSTON, MASS.

The Boston Medical and Surgical Journal

TABLE OF CONTENTS

July 29, 1920

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE

ORIGINAL ARTICLES

CONCERNING SO-CALLED ENCEPHALITIS LETHARGICA, WITH SPECIAL REFERENCE TO ITS SEQUELAE. *By J. W. Courtney, M.D.*, Boston. 123

LETHARGIC ENCEPHALITIS. *By George E. Neuhaus, M.D.*, Denver, Colorado. 130

DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE GENITO-URINARY TRACT. *By Arthur H. Crosbie, M.D.*, Boston. 134

BOOK REVIEW

Stedman's Medical Dictionary. By Thomas Lathrop Stedman, A.M., M.D. 138

EDITORIALS

BOTULISM. 139

VOCATIONAL TRAINING IN HOSPITALS. 140

BACTERIA AS A FACTOR IN FUTURE WARS. 141

MEDICAL NOTES. 141

THE MASSACHUSETTS MEDICAL SOCIETY

AFTER DINNER SPEAKING AT THE ANNUAL DINNER OF THE MASSACHUSETTS MEDICAL SOCIETY, AMERICAN HOUSE, JUNE 9, 1920. 144

OBITUARY

MAJOR GENERAL WILLIAM C. GORGAS. 149

CORRESPONDENCE

BISMARCK, PIROGOFF, AND THE GERMAN EMPIRE, OR HOW THE MAP OF EUROPE MIGHT HAVE BEEN CHANGED THROUGH THE APPLICATION OF A SPANISH FLY BLISTER. *William Pearce Coues, M.D.* 150

MISCELLANY

NOTICES, RECENT DEATHS, ETC. 150

Original Articles.

CONCERNING SO-CALLED ENCEPHALITIS LETHARGICA; WITH SPECIAL REFERENCE TO ITS SEQUELAE.*

BY J. W. COURTNEY, M.D., BOSTON.

ANYONE who has seen much of the plague whose ravages we are about to consider will share with me, I am sure, a keen sense of dissatisfaction with its nosology. That a true encephalitis is the most striking feature in its pathology is undeniable, but that the lethargy which accompanies it is sufficiently outstanding and constant to make it pathognomonic is more than debatable.

The term "encephalitis lethargica" is but a descriptive one at best, and its selection to cover the protean clinical manifestations of the disease-process it is intended to designate is not merely unhappy, but conducive to widespread failures in diagnosis, as I shall presently endeavor to demonstrate.

Upon the historic side of this malady I shall not venture. For aught I know our remotest forebears may have been thoroughly conversant with it. With us its sinister visitation in epidemic form is sufficiently recent and minatory to stimulate the utmost haste to familiarize ourselves to the fullest possible extent with its pathogenesis, pathology and clinical expression, to say nothing of its treatment and prevention.

Pathogenesis.—Is it a bacterial disease and, if so, is it a congener of influenza and poliomyelitis? These are two questions difficult of satisfactory answer. As matters stand, we cannot look to the laboratory for such answer. Except to the most uncritical the current views on poliomyelitis, bacteriologically speaking, are in nowise convincing. And, from the same standpoint, the case of encephalitis seems even more hopeless.

Let us waste no time on this point. In a goodly percentage of my personal observations encephalitis lethargica followed so closely upon the heels of an attack of influenza that I am satisfied that the former is metabiotic to the latter.

Port of Entry. Assuming that the disease under consideration is bacteriologic in origin, through what channel does the organism find its way into the economy? To my way of

* Paper read by invitation before the Newton Medical Club at the Newton Hospital, May 10, 1920.

thinking the nose and accessory sinuses seem the most logical route.*

The reporter of cases who is satisfied that his history covers every step in the development of a given disease is indeed self-complacent. Such an achievement is quite out of the question for various reasons, of which two are paramount: (1) Memory defects and impossibility of coöperation on the part of the patient himself; (2) lack of dependable observation on the part of his entourage. For these and similar reasons the toxic activities in the nose and accessory sinuses proper of the bacillus of encephalitis lethargica are seldom recorded, and it is not until the cranial contents are obviously involved that the disease excites serious attention and alarm. Be this as it may, the fundamental obstacle to the proper understanding of any disease-process is the too common failure on the part of observers to think in terms of anatomy and physiology.

In the clinical histories of cases of the disease under consideration we are struck by the frequency with which the involvement of certain cranial nerves is recorded and likewise by the order of this involvement. Particularly conspicuous for its susceptibility to invasion is the oculomotorius (third nerve); less so, perhaps, the sixth, seventh, ninth and tenth.

A glance at the anatomic relations of the sphenoidal sinus—to take but a single example—will materially aid our understanding of this phenomenon.

White[1] reminds us that these sinuses vary greatly in size and position, even in the same individual. They may extend outward and backward into the greater wings of the sphenoid to the Gasserian ganglion and have a capacity of twelve cubic centimeters or more. The pituitary body, chiasm and optic nerve are in relation to the superior wall, while externally lie the optic, abducens, oculomotor, trochlear, ophthalmic and maxillary nerves, the cavernous sinus, the internal carotid artery, and the dura of the middle fossa. Killian[2] says, "The blood circulating in the cavernous sinus bathes the whole roof as well as the lateral walls."

Brief as the above anatomic consideration is, it makes very clear the reason for the frequent and early involvement of the third cranial nerve. It does not explain why nearby nerves, particularly the optic, are less frequently involved. There is doubtless some subtle determinant in these cases just as in brain tumors where, of several nerves equally contiguous to the growth, one is invariably spared. Doubtless it is this same not altogether intelligible determinant which, in a given case of so-called encephalitis lethargica, effects a preponderance of toxic activity in those tissues which lie in some particular one of the three cranial fossae. However this may be, we have abundant clinical evidence of such preponderance, a circumstance which has given rise to the recognition of numerous sub-types of the disease.

Pathology. Before we enter upon a consideration of these sub-types and the clinical manifestations which differentiate them one from another, let us consider the pathology of encephalitis lethargica. From the outset we should keep prominently before us the fact that, if this disease is indeed of bacterial origin, the organism is not a pyogenic one. This fact explains two things: (1) The consistent absence of meningeal pus noted at necropsies and (2) the sterility, *in every sense*, of laboratory findings.

On inspecting the brain stem of a recently fatal case, the attention is at once arrested by the universal pinkish appearance presented. This results, as you know, from the injection accompanying acute inflammation and while this injection may be intense throughout, it is often strikingly so in certain loci, notably in the medulla, midbrain and thalamus. Noteworthy is the fact that this vascular engorgement is more pronounced on the venous than on the arterial side, that small hemorrhagic areas are here and there observed about the smaller veins, that minute thrombi with necrotic changes in adjacent tissues may likewise be discernible, that cellular infiltration takes place in the adventitial lymph spaces which may contain accumulations of leucocytes and plasma cells, and that a certain degree of gliosis may be found in and about the nuclei of affected cranial nerves.*

Upon microscopic examination the pia mater shows considerable injection and some degree

* Attention is hereby called to an interesting paper by Loewe and Strauss, which has appeared since this paper was read. Its title is, "The Diagnosis of Epidemic Encephalitis: Value of Nasopharyngeal Washings and of Cerebrospinal Fluids," Jour. A. M. A., Vol. lxxiv, No. 20, pp. 1373-75. Among the conclusions arrived at by the above authors the following is most significant: "The Berkefeld filtrates or nasopharyngeal washings from cases of epidemic encephalitis produce characteristic lesions when injected intracranially into rabbits. This finding has served us as an aid to diagnosis in 78 per cent. of the cases so tested."

* For a part of this pathologic picture the author is indebted to the valuable paper of Tilney and Riley, Neurolog. Bull., Vol. II, No. 3, pp. 106-135, March, 1919

UNIVERSITY OF OKLAHOMA

of round cell infiltration, and all the cells of affected nuclei show pathologic alterations of varying intensity. In them one may find moderate cloudy swelling with eccentric nucleus and obscurations of the Nissl bodies or a fairly advanced chromatolysis in which the more central layers of tigroid bodies have disappeared. Some degree of neuronophagia may also be found, and ameboid glia cells may be clustered around the motor cells when the latter reach an advanced stage of degenerative change.

Now, if we keep constantly in our minds a vivid picture of the potentially widespread character of the pathologic process just described and give due consideration to the fact it may attain its maximum intensity in such tissues as lie within some one of the three chambers of the cranium; if, furthermore, we never lose sight of the fact that a brain cell exposed to the action of a toxic agent may give outward expressions to this action, which vary greatly in duration, character and intensity according as the toxic agent is exciting a reaction which is purely irritative or one which is actually degenerative, we will have no excuse for failing to recognize each and every one of the protean clinical expressions of this pathologic process so far as they are traceable to the encephalon. But this is not the end of this chapter. When we come to the matter of symptomatology, we shall see that, in certain cases, there are clinical signs which suggest an implication of the spinal cord. And I will say right here that I have observed—although never associated in the same case—intense hyperesthesia of the abdomen and extremities, a curious semigranular thoracic and abdominal eruption and urticarial wheals—observations which impel me strongly to the belief that, in last analysis, so-called encephalitis lethargica is in reality a systemic toxemia of which the resultant brain inflammation is the most striking and dangerous expression.

Symptomatology. The action on the human cerebrum of the toxin of encephalitis is strongly analogous in many respects to that of alcohol upon this same organ. In persons not thoroughly accustomed to the use of alcohol its toxic action upon the psyche varies strikingly in character and intensity, according to the individual and the amount ingested, as we all know. Certain persons with low power of toleration are made very drowsy by even two glasses of ordinary red wine. In others, somewhat more habituated, this same amount stimulates the flow of ideas and facilitates their expression by lowering the threshold of inhibition. With a progressive ingestion of the toxin and a consequent progressive lowering of the threshold of inhibition, ideation ultimately attains a degree of rapidity little short of vertiginous, and expression is strongly tainted with incoherency. Incidentally, in an intermediate stage, the bestial side of human nature makes itself clearly manifest. In the chaos of ideas which throng consciousness at this stage are discernible the germs of crimes against Nature and of physical violence carried, in certain cases, to the extreme of actual murder. It is but a short step from ideation to motion. The stimulus which excites the former easily overflows into cortical regions which excite the latter. Consequently in a fairly early stage of alcohol poisoning we encounter—in addition to intensive vociferation—facile and boisterous laughter, diplopia, inordinate gesticulation, or that further expression of motor excitement which we term dancing. It is in a somewhat more advanced stage of this same motor excitement, coupled with its natural moral inhibition, that moral delinquencies and acts of physical violence are perpetrated. And with still further ingestion of the poison we may encounter convulsions, coma and death. In the more chronic forms of this poisoning we observe deluded and hallucinated states, dementia and neuronic degenerations, central as well as peripheral.

With this picture of the protean action of a circulating toxin—alcohol—in our minds, let us study that of "encephalitis"—likewise circulating—and we shall see a marked similarity. Remember that the latter toxin has practically virgin soil, so to speak, for the exercise of its irritative and destructive activities and that in a given case we have, at least at the outset, no knowledge of the stricken individual's powers of toleration. As a consequence, we observe in the psychic sphere reactive variations which are striking and noteworthy. In a certain number of cases the reaction takes the form of a lethargy which may grow progressively profound and become the outstanding clinical feature. Here let me caution you, however, that in no case—except, perhaps, in an agonal stage—must you expect true coma or stupor. In practically every case I've seen there are times

when the patient is spontaneously bright and alert mentally or can be easily aroused to that state; and when so aroused is perfectly capable for a brief period of coöperating with the examiner. I have also seen cases which might be termed "walking cases," in which the lethargy was not sufficiently profound to keep the patient continuously in bed. These facts, in and of themselves, show how unwise it is to stress the lethargic phenomena of the disease under consideration. Indeed, it is a recognized fact that the toxin of encephalitis may produce conditions in which lethargy is merely episodic. In these conditions the psyche may for the most part be so congested with conflicting ideational complexes, and the synchronous play of visual and auditory hallucinations may be so lively, that the patient presents the picture of acute and violent mania which, in turn, may culminate in epileptoid convulsions or fatal status epilepticus. In other cases the psychic reaction is much less violent in expression. In these we encounter depression, delusional states and a certain degree of dementia.

On the motor side the toxic manifestations show curious and interesting groupings. This fact has expanded the terminology of the disease in a way that seems to me rather unnecessary and undesirable. To illustrate this point let us take the case of the *polioencephalitic* type, so called. This is characterized by a general myasthenic state coupled with a serial palsy of cranial nerves. Evidently, the authors who adopted the term "polioencephalitic" to designate this syndrome were guided in their choice by the necropsic discovery of marked nuclear degeneration. The objection to their interpretation of their observation is this:—Cranial nerve palsies, particularly that of the third nerve, occur much too early in the course of the disease and disappear much too promptly to permit the conclusion that their early presence is due to nuclear degeneration. To my way of thinking it is much more logical to explain the behavior of these palsies on the basis of *nerve block*, the toxin finding its way into the nerve sheaths by imbibition and inhibiting conduction for longer or shorter periods. I regard nuclear degeneration as a late manifestation.

In another clinical type the motor phenomena are so combined and of such a character as to present a picture in practically every respect identical with that of Parkinson's disease. It is startling, I assure you, to observe the rather rapid development of this syndrome in a young subject. But its interpretation, like that of the *cataleptic* type of which I shall presently speak, is simple if we keep ever in mind the nature and distribution of the underlying pathologic process. In the Parkinson type we encounter the characteristic mask-like expression, the asthenia, the rigidity and the peculiar tremor. The matter of locomotion deserves special consideration. The gait is shuffling and somewhat festinating, and nearly every patient of this type volunteers the information that he is conscious of a decided propulsive tendency and that he can run or even waltz more readily than he can walk.

Coming now to the cataleptic group we find the outstanding clinical feature to be, at the outset at least, a more or less general but intermittent rigidity of the body which has this striking characteristic:—The limbs can readily be moved from one position to another. Where the temperature shows a rise of only trifling extent, it is a common error on the part of clinicians to mistake the above syndrome for hysteria, and this diagnostic ineptitude is favored, especially in the case of young females, by the primarily intermittent character of both the rigidity and the lethargy, and the absence of significant alterations of the reflexes.

There is another striking type of the disorder, the so-called *choreic*, which deserves our most serious consideration. In this type the possibility of diagnostic error is also great. We may generally prevent such error by assuming in a given case that a subject, particularly a vigorous male, past the second decade of life, who exhibits choreic movements which are practically universal and of a high order of intensity, is not the victim of St. Vitus' dance. On close study, evidence of the underlying encephalitis will be found either in cranial nerves or the psychic sphere.

For intelligent comprehension of the myospasms—tonic or clonic—which characterize the three clinical types just considered, allow me to revert to and emphasize a point already brought out in connection with pathology, *i.e.*, when motor nerve cells are continuously exposed to the action of a circulating toxin, the muscles directly under their control exhibit reactions which vary uniformly according as the result of the toxin is irritative, partially degenerative or completely disintegrative. Now,

UNIVERSITY OF OKLAHOMA SCHOOL OF

if we apply this principle to the myospasms under consideration, their understanding is not at all difficult. Where the toxic action is purely irritative the spasm is naturally tonic and intermittent, as in the early stages of the cataleptic type above described. Where there is only a slight degree of degeneration, and this limited to certain cellular elements, a constant state of unstable equilibrium obtains and clonic spasms result, as in the Parkinsonian type. And with a somewhat intense degenerative reaction we get choreiform movements of the most violent order. The advance, under prolonged and intensive toxic exposure, of cellular degeneration and functional annihilation is most interestingly demonstrated in the cataleptic cases. If in such cases the disease process is at all prolonged the muscle spasticity gives way to a true hemi or diplegia of a flaccid order, the tendon reflexes become greatly exaggerated, and there are present ankle-clonus and the Babinski phenomenon together with other phenomena indicative of organic implication of the pyramids. This progression is strikingly demonstrated in a case now in this hospital.

Where the cerebellar-ponto-medullary region is mainly involved, there is usually present nystagmus and some degree of involvement of face, tongue and soft palate, associated with week-long acceleration of heart-beat and respiratory movement, incoördination of extremities and diminished or absent knee-jerks.*

Tilney and Riley describe anterior and posterior poliomyelitic types. With regard to the anterior type they cannot be said to have made out a very strong case. Their sole criterion for differentiation from ordinary poliomyelitis is the presence in a given case of profound and prolonged somnolence. In the posterior type, of which they describe but a single observation, the cardinal symptoms appear to be lethargy, ophthalmoplegia and zoster-like involvement of one side of the face and a segment of one limb.

In view of all that precedes one can readily see how difficult it is to follow conventional lines in an attempted description of encephalitis lethargica. *Onset*—The onset is generally rather abrupt. There may be such prodromes as headache, vertigo, vomiting, malaise and lassitude, but, in my own experience, diplopia is by far the commonest symptom to first attract the patient's attention, and it is not unusual for it to appear while he is walking on the street. *Sex*—The incidence of the malady seems to me to be no greater in the one sex than in the other. *Age*—Early life furnishes by far the largest quota of victims. In fact, the new-born is attacked with sufficient frequency to impel Tilney and Riley to dwell with particularity upon a *neonatorum* type of the disease. In the *Journ. A. M. A.*, March 13, 1920, Margaret Schulze[3] has an interesting paper on the disease among pregnant women, which shows that the incidence among them is not strikingly high. In general, I think it may safely be said of both sexes that susceptibility decreases after the fifth decade. *Temperature*—Pyrexia is not an outstanding feature of encephalitis. Cases are reported in which no febrile movement whatsoever was observed. The general average is 101 or 102. Sudden elevations, even to 106 and 107, have been observed. These, however, are apt to be followed by equally sudden declines. *Reflexes*—The behavior both of the tendon and cutaneous reflexes is, very naturally, dependent upon the exact anatomic situation and the intensity of the lesion. In many cases they show no significant changes. *Duration*—In the present state of our experience it is extremely hazardous to venture a dogmatic pronouncement on these two matters. The course of the disease is varied like its clinical manifestations. In certain cases it progresses steadily to an abrupt termination; in others there are remissions of notable duration and, in a final group, outbreaks occur in new areas after seeming recovery. In speaking of duration one must be particularly guarded. What may be termed the acute stage may run its course in comparatively few days or it may drag along for nine or ten weeks. When we have said this, we have said all that is really warranted. *Seasonal Influence*—The incidence of the disease, like that of influenza, is greatest between autumn and late spring. Sporadic cases may occur in any season. *Differential Diagnosis*—By reason of the potential involvement of extensive cortical areas and adjacent cranial nerves, encephalitis may simulate, at least superficially,

* In the Journal of the American Medical Association, Vol. lxxiv, No. 19, p. 1315, Dr. Williams B. Cadwalader of Philadelphia, calls attention to another symptom of encephalitic involvement of pons and medulla observed by him in two cases, in one of which the clinical diagnosis was confirmed at autopsy. This symptom—sympathetic ophthalmoplegia—is due to involvement of a tract which traverses the dorso-medial region of the pons and medulla and contains oculo-pupillary fibres. It is characterized by pupillary contraction, narrowing of the palpebral fissure and slight retraction of the eyeball. In view of the diffuse character of the encephalitic process, the symptom in question may be bilateral and, in consequence, the narrowing of the palpebral fissure and pupillary contraction may be overlooked.

a variety of diseases. There is, however, very little danger of going wrong in diagnosis if we bear in mind certain fundamental facts already set forth, make the closest possible scrutiny of clinical phenomena presented, do our thinking in terms of anatomy and physiology, and invoke the aid of dependable laboratories. *Prognosis*—This must be considered from two points of view: First, the prognosis *quoad vitam*. This, in a general way, may be said to depend upon the particular encephalic site upon which the disease chances to exert the maximum of its toxic activity. Sinister is the presence of profound and prolonged lethargy, although this phenomenon, in and of itself, by no means precludes survival. The situation is graver still when a psychomotor reaction to the toxin manifests itself through epileptic or maniacal states, or a combination of the two. And a fatal issue practically always results in cases characterized by violent and incessant generalized choreiform movements. It is needless to say that when deep lethargy is combined with marked involvement of bulbar nuclei, survival is the exception. In such cases exitus is usually due to cardiorespiratory paralysis. Mortality among pregnant women appears to be particularly high; among infants very low. Mortality figures must, for the present at least, be accepted with considerable caution. They are only too manifestly the product of relatively limited personal experiences. Such figures will be of no practical value until massive groups of cases representing the different clinical types of the disease have been correlated and their histories studied analytically.

Second, the prognosis *quoad restitutionem ad integram* is a matter which, in its entirety, cannot possibly be given at this time. I think it safe to say, however, that the cranial nerve palsies and the hemi- and diplegias, which are commonly observed during the acute and subacute stages of the disease, practically always disappear after a period which may vary from a few days to many weeks. I also feel safe in saying that we may, as a rule, look for a complete disappearance of the delusional states, depressions and dementias (real or apparent) which also characterized the earlier stages of certain cases. On the other hand, are we at present warranted in looking forward confidently to the ultimate passing of certain other clinical phenomena which are about to be discussed? This is a matter so intimately associated with that of treatment that they cannot very well be handled separately.

In entering upon this final phase of the subject, permit me to turn your attention once more to certain points in the pathology of encephalitis. You may remember that I laid particular stress upon the potential involvement of the entire encephalon by this process and that I held the partial degeneration of motor nerve cells caused by its action responsible for the myospasms—tonic and clonic—which form an integral part of its clinical picture. Incidentally, you will recall that, in discussing this picture I drew your attention sharply to the presence, well in its foreground, of the paralysis agitans complex. My present reason for reverting to these myospasmic manifestations is that, after undergoing a curious metamorphosis, they tend to persist and, in consequence of this pernicious tendency, they block all our present efforts to establish an ultimate prognosis.

Like other observers, I have seen the Parkinsonian syndrome of encephalitis entirely disappear, but with me this issue has been the exception rather than the rule. Repeatedly I have noted in cases of this type a most striking transformation in the character and behavior of its muscular manifestations. A single case, briefly cited, will illustrate the point under consideration. It is that of a married woman aged, at the time of the onset of the disease, 35 years. This was in January, 1919. The onset itself was of noteworthy rapidity. Paresis of the right third nerve associated with somnolence and slight febrile movement were the initial clinical manifestations. Within a relatively short time, however, the picture was an absolute counterpart of that of paralysis agitans. For a matter of several months it remained unchanged save for the disappearance of the third nerve paresis with its accompanying diplopia. About that time the following metamorphosis began to manifest itself. The mask-like expression, the muscular rigidity and the pea-rolling tremor gradually vanished, only to be replaced by universal clonic myospasms. On close examination these spasms betrayed the following characteristics: (1) Corresponding muscles on either side of the body were synchronously affected; (2) the spasm was both rhythmic and cyclic, and each muscle exhibited two or three contractions before the spasm passed on to the next in the

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE

cycle. In this connection it is interesting to note that the order of the spasms was not at all conditioned by muscular contiguity. The intensity of the spasm may be judged by the fact that the periosteum in the neighborhood of the lower attachments of the anterior tibial groups, particularly on the left, became exquisitely sensitive from the constantly recurrent pull on these attachments.

All during this time the patient was wont to be very drowsy in the afternoon. A sense of propulsion was fairly constant, and she could walk fast, run or dance more easily than she could walk slowly. The gait was not truly festinating. The patient herself described it as "hitchy." What she meant may well be imagined if we do no more than to take into consideration the presence of intense rhythmical spasms of the dorsal flexors of the toes and the extensors and adductors of the thighs. The reflexes were and, for that matter, still are equal and lively but not pathologic.

Latterly considerable improvement has been noted in various respects. The daytime drowsiness has entirely disappeared and the intensity of the myospasms has materially diminished,—to such an extent, in fact, that the periosteal soreness above referred to has disappeared and the hands can be used for needle work. But the gait is still "hitchy," the propulsive feeling still persists and the patient still contends that she can run or dance better than she can walk. None of the spasms has entirely disappeared.

In other cases these persistent clonic myospasms are by no means so widely distributed. Their effects are none the less bizarre, however. In a patient I saw with Dr. William V. McDermott of Salem they were mainly confined to the lower extremities. They were slow and rhythmic as usual, and the movements produced in the limbs were distinctly athetoid and serial. These would start in the toes of either foot and produce a succession of gyrations of gradually widening excursion, the whole limb meantime trending upward until it became absolutely vertical. In a few moments this limb would descend to its horizontal position on the bed and a similar performance would begin in the other limb. The reflexes and all forms of sensibility were normal.

In another patient, a vigorous man of 25, the following interesting cycle of myospasms was observed many months after the passing of the acute stage of the disease. At regular intervals, as this patient walked about, the head would be suddenly and sharply rotated to the left, the right arm would execute a sabre-sweep movement across the chest and the right thigh become adducted to the point of overlapping the left. In a few moments the spasm would cease and locomotion become normal until the advent of the next spasm cycle. Here again sensation and reflexes were entirely unaltered.* In still other patients I have seen the spasms were limited to the flexors of the thighs, a condition which brought about a sort of intermittent "goose-stepping" when walking was attempted. It is needless, I am sure, to recall again to your minds the fact that a thorough understanding of the pathology and encephalic distribution of the disease process underlying these spasms makes clear their varied distribution, to say nothing of their character.

In view of our ignorance of the exact nature of encephalitis, our method of dealing with it is perforce empiric. In its very early stages we may be called upon to combat pyrexia, restlessness, delirium or mania, according to the type with which we are dealing. In all cases it is our natural function to maintain a healthy condition of the skin, to sustain nutrition and favor elimination through the regular channels. Common sense dictates all these things, and I am sure that everyone in my audience has his own peculiar way of going about their accomplishment. I shall offer no suggestions on this score. I will, however, call attention to the fact that Tilney and Riley report that in certain cases good results follow repeated lumbar puncture. They recommend the withdrawal of from 10 to 20 cc. of the fluid every three to five days. The procedure seems eminently logical.

During the convalescent period these same authors extol the action of suprarenal residue in doses of five minims by mouth three times a day after food, in combating the asthenia commonly observed at this time. As an adjunct they suggest the hypodermic injection of strychnia cacodylate gr. 1/60 every day, either with or without the arsenate of iron. I have not chanced to use either of these remedies. I generally advise a prolonged rest cure of the Weir Mitchell order. This is not only desir-

* In no case are the spasms associated with even the slightest degree of clouding of consciousness

able but imperative in cases where implication, even of slight extent, of the cardio-respiratory centres has been a feature of the case. For the myospasms above described I have obtained the best results from the use of the fluid extract of conium in doses of from 3 to 15 drops after meals and at bed time.

In one or two severe cases I have seen the myospasms disappear entirely. This outcome is, I fear, exceptional. In a rather large group which I have been following for over a yea there is, on the whole, improvement. Whether or not there will ultimately be complete recovery and, if so, how long it will take, I do not pretend to know.

REFERENCES.

[1] White, Leon E.: Loss of Sight from Retrobulbar Neuritis Due to Posterior Accessory Sinus Disease, with Report of 17 Cases. BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxxxi, No. 16, pp. 483-491, Oct. 16, 1919; and No. 17, pp. 505-510, Oct. 23, 1919.
[2] Killian: The Accessory Sinuses of the Nose and their Relation to Neighboring Parts, 1904.
[3] Schulze, Margaret: Encepbalitis Lethargica in Pregnancy. Jour. A. M. A., March 13, 1920, pp. 732, 733.

LETHARGIC ENCEPHALITIS.

BY GEORGE E. NEUHAUS, M.D., DENVER, COLORADO,

Professor and Head of the Department of Neurology and Psychiatry, School of Medicine, University of Colorado; Attending Physician, Denver City and County Hospital; Physician-in-Charge, Mount Airy, Denver.

LETHARGIC ENCEPHALITIS, or epidemic encephalitis, which is a better name to give to this disease, the objection having been raised that it is the patient who is lethargic and not the disease, was first observed as following in the wake of the epidemic of influenza which swept over middle and southern Europe in 1890.

It became epidemic in Italy and Hungary, and was characterized by the same symptoms most frequently seen today; namely, paralysis of certain cranial nerves and lethargy. This epidemic was rather mild.

Bassoe,[1] in his paper on epidemic encephalitis, states that as early as the beginning of the 18th century, observers noted the coincidence of epidemic catarrhal disease with an epidemic of sleeping sickness. He quotes Camerarius, who describes a grippe epidemic in Tübingen in 1718 and who mentions a "sleeping sickness" in connection with it; a French medical historian mentions epidemics of catarrhal fever with soporosité" as having occurred in Germany in 1745, in Lyons in 1840 and in Milan in 1802. Lepecq de la Cloture in 1768 describes a "coma somnolentum" after the grippe. Whether these earlier accounts refer to the same disease as ours, or should be interpreted as meningitis, is, of course, impossible to say at this time.

The American pandemic of 1890 seems not to have been accompanied by encephalitis; at least, no mention is made of this disease in any of the public reports.

When, in 1917, during the Great War, influenza became pandemic in Europe, an epidemic of encephalitis was observed in Austria by Economo of Vienna, who gave it the name of "encephalitis lethargica." Its mortality was high. In the spring of 1918 this disease was observed in France and England, and in the fall of the same year in this country.

The first case seen in this city, to my knowledge, occurred in the County Hospital in the winter of 1918-1919. Since then, cases have been observed by many physicians. The following three cases were seen by me during the past winter:

MENTAL SYMPTOMS, LETHARGY, BILATERAL PTOSIS, TEMPERATURE.

J. H., a male, was sent on December 13, 1919, to Mount Airy because he had become unmanageable at home. He was a coal dealer by occupation, thirty-four years of age, born in Russia, married, with four children, no history of miscarriages in the wife. His family history is of no importance.

In his personal history, two facts stand out as worth mentioning. He stated repeatedly "Last year, some doctor told me I had syphilis." This he claimed to have contracted from a girl in Kremenitz, Russia; that he had an initial sore and then a breaking out on his body. The other item is that he had influenza in July or August, 1919.

Patient is a short, stocky man, well built and well nourished, very restless, his attention difficult to hold and very flighty. He is troublesome and stubborn. His speech is rapid, but shows no defect and no aphasia. Physical examination, with the exception of the neurological, was negative. His knee jerks were somewhat exaggerated. There was a slight positive Romberg. The pupils were unequal, the left larger than the right and reacted only slightly to light, while the right reacted normally to light. The blood Wassermann on December 18 was plus 3, plus 3. The spinal Wassermann on the same date, negative. Blood Wassermann December 31, plus 3, plus 3. Spinal Wassermann, same date, plus 1, negative. No increase in globulin and cell count and a col-

UNIVERSITY OF OKLAHOMA SCHOOL OF

loidal gold curve of 0012200000. Urine, negative. Eye ground, negative.

The clinical course of the disease was marked by gradually increasing drowsiness, which was in striking contrast with the restlessness and occasional stubbornness which the patient showed during the first ten days of his stay at the hospital. During the last week, he slept more or less constantly and had to be fed by tube. The only new neurological symptom which developed during this time was a marked bilateral ptosis and a bilateral total pupillary immobility. His temperature ranged from 99 to 101.4. He was taken home on December 31 and died the next day. No necropsy was obtained.

A provisional diagnosis of atypical general paresis was made on the strength of the history of lues which this patient gave and was held even after negative spinal fluid was reported by the laboratory.

An uneasy diagnostic conscience made us consider seriously the possibility of brain tumor, although very little pointed in that direction. An x-ray picture of the head proved negative, and the true diagnosis was only made when the patient was reported dead after leaving our hospital. I believe it should have been made on the triad of symptoms: Eye symptoms, lethargy, and rise in temperature.

LETHARGY, CATATONIA, KERNIG, AND STIFF NECK, EYE SYMPTOMS, TEMPERATURE, SOME INVOLVEMENT OF PYRAMIDAL TRACTS.

The next case was seen on December 12 and 13 in consultation with Dr. George Sibbald. M. S., a married woman, fifty years of age, had one son, no miscarriages.

Her family and personal history are of no interest, except that during the early part of the summer of 1919 she had an attack of influenza which kept her in bed for about four or five days. After this attack, she showed some change in character and disposition. She sold a rooming house which she had owned for some time, because she became dissatisfied, and moved to a different part of the city. She soon was sorry for her action and talked a good deal about the mistake she had made.

As time went on, she seemed to become forgetful, at times drowsy, and acted strangely. On several occasions when some of her old friends called and their visit had been announced, she failed to go to meet them, staying in her room instead.

About December 1, while in her bathroom, she suddenly complained of feeling weak and had to be assisted downstairs to her quarters by a boarder in the same house. She had to lean heavily on this woman. She went to bed and passed gradually more and more into a condition of torpor, from which she could be aroused and then would answer questions correctly. Her rectal temperature rose to 102 on different occasions. Most of the time, she lay motionless in bed and showed no initiative. This, and the lethargy, led to a diagnosis of cerebral thrombosis being made. She was examined in consultation December 12 and her condition was, briefly, as follows:

Right pupil irregular and smaller than left. Both pupils react to light. On opening the mouth, lips do not open so widely on the left as on the right. Right side of palate rises higher than the left. Rigidity in neck present, but not very marked. Slight Kernig on both sides. Tendency to rotate head to the right. Both upper extremities rigid, left more than right. There is no paralysis and patient is able to move all extremities when urged. Both knee jerks exaggerated, left more than right. Positive Gordon and Oppenheim on right, not on left. Abdominals absent except for the right lower. Patient assumes a stereotyped position in bed and is catatonic. Patient dull and apathetic, but on questioning, complains of frontal and occipital headache. Incontinence of bladder and bowels. Optic discs show no change. Raised hyperemic spot on the left wrist, size of a quarter. Large raised hyperemic, slightly hemorrhagic spot on the right side of the back, just below the scapula. S. B. P., 140; D. B. P., 90. Laboratory findings: White blood count, 18,600; differential blood count, polys. 70%; lymph, 20%; large mons. 5%; trans. 4%; eosin 1%. Cerebrospinal fluid, globulin, negative. Cell count, no cells found. Colloidal gold, 11100,00000. Wassermann blood and spinal both negative.

The patient died a few days later and although a necropsy was asked for, it was not obtained.

MUSCULAR JERKING, BULBAR SYMPTOMS, CATATONIA, LETHARGY, EYE SYMPTOMS, TEMPERATURE.

The third case, H. J., a young girl fifteen years of age, who was employed in a bank, was seen in consultation with Dr. C. F. Gale. The mother states that the patient had an attack of influenza during the winter of 1918, and another attack in March, 1919. After this last attack, she would have spells of extreme nervousness. In the summer, she had an attack of smallpox. She was then well until about December 1, when she began to complain of pains in her chest and back. Her shoulder muscles were painful, especially at night. There was no headache and no temperature, but the patient was very drowsy. She stayed home for three or four days, but as she seemed a little better, at the end of this time she returned to her work in the bank for a week. During this time she was nervous and flighty and would frequently retire to the rest-room to sleep. About December 14, she came home complaining of feeling tired and exhausted. She had been in bed ever since. During this

time she has slept more or less continuously. Was apathetic and talked only when questioned, but then gave correct answers. She moved about voluntarily only rarely. There was present, however, during the last days at the bank and during the first five days of her stay in bed, considerable twitching of the arms and jerking of the legs. Three days ago, she began to have difficulty in swallowing, so that fluids would run out of her mouth. When the jerking disappeared, there was some stiffness of her legs and arms which increased, so that at the time of her examination, she was quite spastic and showed marked catatonia. There was no paralysis. For the last two days she has been able to control her sphincters.

Examination on December 24 showed the following status: Patient very apathetic, but consciousness appears to be clear. Forehead wrinkles more on the left than on the right. Eyes closed promptly when she was asked to close them. Pupils about three millimeters in diameter, equal and regular. React to light and to accommodation. Partial ptosis of both eyes. Yesterday there was said to have been a slight horizontal nystagmus; not present today. Eyes converge, tendency of right to turn inward. Drooping of the mouth on the right. Tongue protrudes only between the lips. Considerable rigidity of the limbs. No paralysis. Right foot held in position of talipes equinus. Reflexes—Right and left biceps present. Right and left triceps absent. Both knee jerks absent; on the previous day the right was still present. Slight plantar reflex on the right; stronger on the left. No Gordon, Oppenheim, nor ankle clonus on either side. Abdominals present. There are occasionally clonic contractions of the right arm distal to the elbow. Slight rigidity of the neck. Kernig reported to have been present on both sides yesterday is absent on both sides today. Eyegrounds normal. Temperature, 100.5 per rectum. Pulse, 110. Respiration, 28. Blood pressure, 128-80. A_2 and P_2 both accentuated. Heart sounds otherwise normal.

Laboratory examination: White blood count, 10400. Blood Wassermann, negative. Spinal fluid—no increased pressure. Cell count, 6 per cubic millimeter. Globulin negative. Wassermann negative. Colloidal gold, 00000.00000.

This patient was markedly improved in three days and reported by the physician in attendance to be entirely well on January 1.

These cases are fairly typical of encephalitis as it has been described by many observers. They present the typical symptoms of lethargy, eye symptoms and rise in temperature. The face of all three patients was masklike and expressionless. In addition they illustrate some of the more unusual symptoms. The first case had marked mental symptoms—hallucinations and delusions and, at first, confusion. Lethargy developed, but the patient could at all times be roused to answer questions. The two other cases had marked catatonia—holding the arms in any position in which they were placed for minutes at a time, and some meningeal symptoms—Kernig and stiff neck.

Case 2 had a mild reactive depression, following her breaking with an old, established habit, that of looking after her rooming house, which had probably nothing to do with the later disease. This patient also had symptoms pointing to an involvement of the pyramidal tracts, the spasticity being more marked on the left side, the toe signs present only on the right.

Case 3 had marked bulbar symptoms in addition to the eye symptoms, indicating that the entire brain stem must have been invaded by the pathological process. She also had involuntary muscular contractions which, from the description given by the attending physician, were choreic in character.

The symptomatology, as reported, can be divided into general and localizing symptoms. Of the general symptoms, the mental hebetude is probably the most striking. The patient becomes more and more somnolent and, eventually, spends almost all his time in bed in profound apathy or sleep. It must be remembered, however, that the double ptosis which is frequently present in connection with apathy or sleep, may simulate sleep when the patient is actually awake. Usually, no spontaneous movements are produced, but some cases have periods when automatic, purposeless movements or stereotyped movements are performed.

Involuntary movements[2] of the face, tongue or limbs, sometimes athetoid, at other times choreic in character, have been described. Some patients have the appearance of paralysis agitans on account of the mask-like expression of the face and the character of the tremor, which is arrested by voluntary movements. It is, in general, characteristic of these involuntary movements that they do not interfere with the correct performance of voluntary movements. Occasionally, periods of restlessness and even excitement have been observed. Catatonia or flexibilitas cerea is a frequent symptom. Hallucinations, delusions and some confusion occur, while loss of sphincter control is a frequent symptom and probably indicates the general lowering of the level of mental activity. Char-

acteristic of the disease is that, in spite of the pronounced lethargy, the reactions of the patients in acts and words are usually remarkably accurate and rational.

The temperature may be normal throughout, or it may show a moderate rise.

Meningeal symptoms, as some stiffness or pain in the neck or a Kernig sign, are not altogether rare. They are, however, not very marked and not frequent.

The localizing symptoms most frequently refer to the nuclei of the eye muscles. There may be present external or internal ophthalmoplegia, paralysis of accommodation and indistinct vision, diplopia, ptosis, either bilateral or unilateral, complete or incomplete. The pupils may be dilated or contracted fixed or normal in reaction or eccentric in position. Strabismus also has been observed and mystagmus and inability to sustain ocular movements, which may be the only defect.[3]

The lower cranial motor nuclei are affected next in frequency, and if the facial is affected, this accounts in part for the mask-like features and the lessened play of the facial muscles so frequently mentioned in the case histories; although some of this must be laid to the indifference which is part of the lethargic state. The tongue, palate, pharynx and larynx may become involved and the patient present the typical picture of bulbar paralysis.

The limbs are much less frequently involved and when this occurs it is due to lesion of the pyramidal tracts in the brain-stem, rather than lower down in the cord. The limbs are always spastic and there is no wasting or loss of tendon reflexes, as in poliomyelitis.

The Babinski sign is sometimes found and the abdominal reflexes may be affected, but there is no typical constant grouping of the symptoms.

Subjective or objective sensory symptoms are rare.

The cerebro-spinal fluid has been examined in most of the recorded cases. No organisms have been found and cultures have been negative. Morphologically and chemically, it has also been nearly always normal. Pleocytosis has been absent and if present, has been a moderate lymphocytosis. Lange's colloidal gold reaction gives negative results. The Wassermann reaction also is negative.

These spinal findings are rather surprising on account of the prevailing perivascular infiltration and the frequency with which small patches of meningitis have been found. But in the cases with more marked meningitis, a few of which have been reported, the fluid shows typical alterations, as in increased globulin reaction, leucocytosis and a meningitic colloidal gold curve.

The duration of the disease is variable, some cases ending fatally in a few days; others recovering in about two weeks and some lasting weeks and even months. Recovery is apparently complete, although a longer time would have to elapse in order to determine whether permanent results, as, for instance, epilepsy, may not follow. When the pupils have lost their reactions, they remain stiff for a long time.

The pathological changes consist macroscopically in the oedema and congestion of the meninges seen on the surface of the brain. There are also minor patches of meninges and minute subpial hemorrhages. On section, the basal ganglia and the pons are seen to be the principal seat of the encephalitic process. Microscopically, there are hemorrhagic foci with lymphocytic infiltration of the small vessels. These foci are found mainly and most abundantly in the midbrain and the pons, but may occur anywhere in the cerebrum, cerebellum and spinal cord. There is also congestion and thickening of the leptomeninges, perivascular infiltration with leucocytes and plasma cells.

The cerebral substance itself shows a similar perivascular infiltration, affecting the nuclei of the mid brain, of the pons and the medulla and the basal ganglia, less markedly the cortex and the cerebellum. The hemorrhagic foci are seen to be very much more abundant than appeared to the naked eye. The nerve cells themselves show chromatolysis and changes in contour. The neuroglia shows proliferating cells, especially around the vessels.

Etiologically, nothing definite is known. Organisms have been described by different observers. In the earlier work on this disease, Pfeiffer's bacillus has been isolated from the areas of hemorrhagic softening, the cerebrospinal fluid and the meninges by Nauwerk in '95, Trouillet and Esprit in '95, and Pfuhl in '97. Von Wiesner claims to have isolated from cases studied during the epidemic of 1917 a gram positive diplostreptococcus, which he claims produced somnolence when injected into apes.

Recently W. W. Hala and Cyril M. Smith[4] of Brooklyn, report a gram negative, motile bacillus, unidentified, but probably belonging to some intermediate class of the colon typhoid-enteritidis group.

Nosologically, there still seems to exist a disagreement among the various investigators as to the true place of this disease. The weight of evidence seems to point to epidemic encephalitis being a distinct disease, while others claim that it is identical with polioencephalitis.

Bassoe[5] states that the etiologic relation of this disease to influenza rests on the above described coincidence of the two epidemics and he suggests that it may itself be a cerebral form of influenza, or that it may be caused by a separate virus, which, in order to become active, must have been in contact at one time or another with that of influenza. Some of the English investigators take the same stand. F. G. Crookshanks of London speaks of the historical evidence "as to the clinical affinity and epidemiological liaison between epidemic catarrhal fever or influenza and lethargic encephalomyelitis." He is inclined to consider this disease as identical with so-called anterior poliomyelitis or polioencephalomyelitis. He states as he says, on high bacteriological authority, that the organisms found by Von Wiesener are indistinguishable from Roesenow's diplococcus which has been found in poliomyelitis. This statement is contradicted by others.

Typical cases of the two diseases differ widely in their symptomatology. There is a more marked prodromal stage in encephalitis. It also affects all ages and shows no preference for children. Its maximum incidence occurs in winter and spring, while August and September is the season when poliomyelitis is most frequently observed. The lethargic element, so striking in the disease which is the subject of this paper is never so marked in typical cases of polioencephalomyelitis. Meningeal symptoms are more frequent in the latter disease, where the fluid is frequently quite early opalescent and shows marked pleocytosis. Inoculation experiments have been made in various cases, and the results were very striking in the virulent Australian epidemic, which had a mortality of 70 per cent. The virus produced typical lesions, not only when inoculated into monkeys, but also into sheep, a horse and a goat. This is at variance with the results obtained with the virus from poliomyelitis, which affects only monkeys.

In poliomyelitis the blood shows marked leucocytosis and only a very slight one in lethargic encephalitis. It is perhaps worth mentioning that the three cases reported all gave a history of having had influenza at different times preceding the onset of encephalitis, although one should here remember the natural tendency to diagnose during and for some time after an epidemic any similar disease as a case of the prevailing epidemic.

Dr. Farquhar Buzzard, in a lecture delivered before the Medical Society of London, states that lethargic encephalitis is undoubtedly an entirely different disease than acute poliomyelitis.

The diagnosis is easy to make in typical cases during an epidemic and rests on the presence of cranial nerve palsies, lethargy and rise of temperature with a negative spinal fluid. But at times it offers the greatest difficulties.

The treatment which was used in the one case under my observation which has made a fairly rapid recovery, consisted in intravenous injections of sodium salicylate twice daily, with the internal administration of hexamethylenamine. It is, of course, impossible to state whether this had any effect whatever on the process.

REFERENCES.

[1] Bassoe, Peter: Jour. A. M. A., Vol. lxxii, p. 971, April 5, 1919.
[2] Lancet, No. 4 of Vol. ii, p. 118, July 19, 1919.
[3] Wilson, S. A. Kinnier: Lancet, Vol. ii, p. 7, July 6, 1918.
[4] Hala, W. W., and Smith, Cyril M.: Archives of Neurology and Psychiatry, Vol. iii, No. 2, p. 160, February, 1920.
[5] *Ibid:* Page 97.

DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE GENITO-URINARY TRACT.

BY ARTHUR H. CROSBIE, M.D., BOSTON.

THERE is nothing particularly new to bring forward in this paper. However, a résumé of the means we have today to arrive at an accurate diagnosis can do no harm, especially as one still sees occasionally a surgeon who when he finds acid fast bacilli in the bladder urine is content to remove the kidney on the side where he can feel a mass without further study. I know of one case where this was done and the enlarged kidney proved to be a

normal hypertrophied kidney and the dead kidney was left with fatal results.

Tuberculosis of the kidney presents many difficult problems for the urologists to solve. We will consider it first.

Symptoms. In most cases there are many points in the history which point to tuberculosis of the kidney. The most prominent symptom is irritability of the bladder. This occurs in all cases where the disease is near the kidney pelvis and there is a discharge of bacilli into the urine. This almost always produces tuberculous ulcerations about the ureteric orifice on the infected side with resulting bladder irritability. I know of nothing that produces a more severe cystitis than tuberculous ulcers of the bladder. In many cases the bladder can hold not more than 20 or 30 cc. of urine. In a small number of early cases where the disease is confined to a small area of tuberculosis in the cortex, there may be no bladder symptoms. As a rule, though, it is a safe guess that where a bladder holds 200 cc. of fluid without pain the case is not one of renal tuberculosis.

In taking the history of these cases the story of old healed tuberculosis elsewhere in the body is always suggestive. Bone tuberculosis is very frequently associated with renal tuberculosis. I have just seen a man who had tuberculous epididymitis (left) twenty years ago. Four months ago he began to have frequency. Examination revealed right renal tuberculosis. Of course, in many cases no history of a previous lesion can be obtained, but one always feels that somewhere there is a concealed focus.

Pain in the kidney region is not a marked symptom in renal tuberculosis. In fact, not infrequently the only pain complained of is in the region of the well kidney, no doubt due to the increased work thrown on this kidney. Occasionally, where there are large acute abscesses in the diseased kidney, there is severe pain and fever. Investigation by Spooner[1] of Boston and others has proved that this is not due to a mixed infection as was previously taught, but by the tubercle bacilli alone. Repeated cultures from acute tuberculous kidneys of this sort have revealed a pure growth of the tubercle bacillus. The only cases that I have seen where there was a mixed infection was in three kidneys that had previously been opened and drained.

The effect of renal tuberculosis on the general health varies a great deal. It is not uncommon to see advanced disease of one kidney in a person who is robust and apparently in perfect health, aside from the bladder symptoms. On the other hand, the patient may present all stages of emaciation. In 1916, I removed a kidney from a woman aged twenty-nine, who weighed only sixty-six and one-quarter pounds at the time of operation. She is now double that weight. If both kidneys are infected, of course the effect on the health is more marked. Where the process is acute and there is a febrile reaction there is usually loss of weight and strength.

Although red blood cells are usually present in the urine, it is rare that there is enough blood to call the patient's attention to it.

Of all symptoms, frequent urination is most marked, and it is this that generally brings the patient to consult a physician. This frequency is due, as stated above, to disease of the bladder and also to an actual polyuria.

Physical Examination. This may or may not lead one in the direction of an accurate diagnosis. In many cases the diseased kidney can be felt, in some the good kidney alone can be palpated. There may or may not be spasm over the affected side. Tenderness over the bladder is occasionally found where the disease is extensive.

In women, occasionally, the diseased ureter can be felt, by vagina, as a grisly cord. There is usually no change in blood pressure.

Examination of Urine. This, of course, is very important. If acid fast bacilli are found in a sterile specimen a good start has been made toward a diagnosis and all that is left to do is to find which side is affected and to make sure that the other side is normal. In many cases, however, it is impossible to find acid fast bacilli in the bladder urine and I have seen cases that were proved later to be tuberculous where guinea pig inoculation was negative. The urine is usually light colored, turbid, the amount of albumin, as a rule, is not very large; the sediment contains many pus cells and usually a few red blood cells, occasionally many. Casts are not frequent. Cultures from the bladder urine not infrequently show growth other than the tubercle bacillus. It is important to remember this to compare with what we get from the urine after catheterization of the kidney.

Radiographs. The importance of radiographs in the diagnosis of renal tuberculosis is

coming more and more to be felt. To be sure, in many cases the radiograms are negative, but where there is much caseation, as where there are large abscesses filled with cheesey material, one is very apt to get suggestive shadows. I have recently seen a case where the x-ray helped a great deal. This was one where there were a few shadows in the cortex of the kidney which resembled stones. This represents a form of renal tuberculosis where the disease is far removed from the pelvis and where the bladder symptoms were slight and the urine negative, except for a few pus cells. I have known of two similar cases in the past where the radiographs showed shadows in the cortex resembling stones. On operation these shadows were found to be calcified areas not resembling tuberculosis. In both cases the calcified bodies were shelled out with difficulty. One developed miliary tuberculosis following the operation and the other, after having drained a long time from the incision, had the kidney removed and it was found to be tuberculous. Therefore, in cases where the radiographs show shadows in the cortex, the greatest care should be made to rule out tuberculosis, and not being able to do so, I should recommend letting such shadows alone. Pyelograms are important, of course, to make sure that shadows are in the substance of the kidney and not in a deep calyx.

Pyelograms. There is nothing distinctive in the pyelograms in tuberculosis of the kidney. The appearance does not differ materially from a pyelonephritis of some other organism. The ureter itself will at times show strictured areas, but this is not pathognomonic.

Cystoscopic Examination. This, of course, is of prime importance. To one who is familiar with the cystoscope there is something about a tuberculous bladder that differs from all other forms of cystitis. Not infrequently, at first glance, one is able to guess accurately that it is tuberculosis and further, to tell what side it is on. Many times there will be an area of ulceration about the ureter on the affected side, while the ureteric orifice on the other side may appear perfectly normal, as also may the mucous membrane about the well ureter. As I have stated before, the tuberculous bladder is most irritable and this makes catheterization of the ureters extremely difficult. In many cases it is necessary to dilate the bladder gradually with some mild antiseptic, such as mercuric chloride 1-50,000, for some days before it is possible to get the bladder to hold enough to allow you to get the ureters. Several years ago I made nineteen attempts before I was successful in getting both ureters and then discovered that the process was double. If it is found that the bladder does not respond readily to dilatation, spinal anesthesia should be used. This is much better than ether, as ether checks the excretion from the kidneys and renders the test very unsatisfactory. Spinal anesthesia does not affect the kidneys and does take away the sensitiveness of the bladder. The bladder can be dilated up to the point where bleeding begins. I have a man in the hospital now on whom I made four attempts and Dr. Chute made one. We were unable to see either ureter. The bladder was so sensitive that even with the local anesthesia, not more than 30 or 40 cc. could be held in the bladder. After attempting for two weeks to dilate the bladder gradually, this was given up and we gave the man spinal anesthesia. Under this, 150 cc. of boric solution was retained in the bladder and both ureters were catheterized with the greatest ease. There were severe ulcerations about the right ureter and none about the left. As we expected, clear straw-colored urine flowed from the left side while that from the right was light colored and very turbid. This illustrates a point that I wish to emphasize particularly. Repeated examination of the bladder urine failed to show tubercle bacilli. Smears from a turbid urine, from the right side, showed no tubercle bacilli, but cultures from this urine, which was full of pus, showed *no growth*. It has been my experience, and it is confirmed by the admirable work of Spooner, that no growth from a ureter catheter specimen where there is much pus means tuberculosis. Repeated cultures from the kidney urine where tubercle bacilli were found showed no growth. The opposite is a safe guess, too. If cultures from a ureter catheter specimen show growth other than tubercle bacillus the disease is almost invariably not tuberculosis, provided the kidney had not previously been opened and drained. Operation on the case mentioned above showed a typical right tuberculous kidney, tubercle bacilli being found in the kidney abscesses. More prolonged study of the urine from the affected side would doubtless have revealed acid fast bacilli. In some cases there are so

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE

many small ulcers and pits that it is impossible to tell just which is the ureter. In these cases it often helps to inject subcutaneously 10 cc. of a solution of 0.4% indigo carmine. In about ten minutes this so colors the urine that the ureters can be easily located by the dark spurts. The presence of any leucocytes on the side that is supposed to be well should make one hesitate about operating until you are absolutely sure that this kidney is not also infected with tuberculosis. In case of doubt, it pays to inject a guinea pig and wait the result. In examining the sediment of the urine, there is a simple procedure that helps a great deal at times and that is to wash the sediment with distilled water. If there is much blood present this helps a great deal by lakeing the red blood cells so that they do not obscure the leucocytes and bacteria.

The function test with phenolsulphonephthalein is helpful, but it must be remembered that in some cases the time of appearance will be earlier on the diseased side than on the well one, although the total amount excreted is pretty sure to be less.

After the diagnosis is made there is only one safe procedure and that is nephrectomy, providing that the process is unilateral. If it is bilateral there is nothing left but hygienic treatment. Even with double tuberculosis of the kidney a patient may live on for several years. I have one man that I have under observation for three years and I cannot see that he has changed much in that time.

Anesthesia. I feel that the anesthetic of choice is gas oxygen. The reason for this is that even though we may not have found it, there is so apt to be latent tuberculosis of the lungs that may be flared up by ether.

Operation. I will not enter into the operative details, but will take up a few points of especial interest. A tuberculous kidney is very apt to be adherent to the peritoneum. It is not uncommon in removing one to tear a hole in the peritoneum. I have done this several times and have never had any trouble arising from it. In one case where the kidney was very low and had previously been opened and drained, I tore a large hole in the cecum. I sutured this at once and the patient healed readily. The question of the treatment of the ureter is still in debate. Some prefer to bring the end into the incision and suture it there, and others prefer to follow the tuberculous ureter to the bladder. Except in extremely early cases, the ureter is always tuberculous. The stiff grisly ureter, in fact, is pathognomonic of tuberculosis of the kidney. No matter how far this ureter is followed there will still be some tuberculous tissue left for nature to take care of. The farther the ureter is followed the more is the risk in the operation. Personally, I like to cut the ureter where it is most convenient and treat the ends with carbolic acid and alcohol and drop the ureter back to take care of itself. I think that most genito-urinary surgeons use this procedure today. As to drainage, I prefer not to drain. The wound is more apt not to heal if it is drained. If the wound once becomes tuberculous it takes months to heal. Of course, in some cases that are sewed up tight, the wound will break down and become tuberculous. I have never yet had one that did not eventually heal. I had one where the whole incision gapped wide open and took nearly a year to heal. In this case, as in most of this sort, the large open wound had no bad effect on the patient's general health.

After Treatment. The irritability of the bladder, which before operation is usually the prominent symptom, begins to improve very soon after operation. This improvement continues often as long as a year. As a rule, the tuberculous ulcers of the bladder disappear of their own accord. If at the end of a few months the bladder has not regained its normal capacity it can be greatly improved by gradually dilating it once or twice a week with some bland antiseptic, such as mercuric chloride 1-50,000. Aside from the bladder treatment, the only thing to do is to look after the general hygiene. I like to have patients sleep out of doors and take the cure the same as patients with tuberculosis elsewhere.

Tuberculosis of the Bladder. In my experience this is always secondary to tuberculosis of the kidney. The treatment is directed to the kidney.

Tuberculosis of the penis is very rare. The only case I have ever seen was in a ward visit with Dr. Edward L. Keyes. The condition is most apt to be confused with epithelioma and can be differentiated surely by microscopical examination.

Tuberculosis of the Epididymis. This condition, in my opinion, is always associated with tuberculosis of the seminal vesicles and

prostate and in the treatment of the epididymis this should not be lost sight of.

The onset is gradual and usually without pain. Frequently the condition is not noticed by the patient until the pressure of a beginning abscess causes discomfort. The diagnosis as a rule is not difficult. The process is confined to the epididymis and vas. The epididymis is thickened and not tender, frequently nodular. The vas is thickened and firm, resembling the feel of a tuberculous ureter. The diseases to differentiate it from are chronic inflammation, other than tuberculosis, gumma, and new growth. A patient often has to be watched for some time before one can rule out absolutely a chronic non-tuberculous inflammation. The previous history of a urethritis is of help. The vas in non-tuberculous infection is rarely much thickened. In this condition, the thickening gradually subsides while that of tuberculosis increases or remains stationary. Gumma, as a rule, is not difficult to rule out. There is the history, the Wassermann reaction and then the fact that gumma almost always affects only the testicle, while the tuberculosis is always primary in the epididymis and only affects the testicle rarely and then late in the disease. New growth is sometimes very confusing. I saw one case where there was marked thickening of the epididymis and cord. It resembled tuberculosis, except that though the cord was thickened it was not so firm and grisly as in tuberculosis. This turned out to be a new growth of embryonic origin. When in doubt it is wise to remove a small piece, under local anesthesia, for examination. Where there is a question of new growth, delay in making a diagnosis may be fatal.

In most cases of tuberculosis of the epididymis rectal examination will reveal the same trouble in the prostate and vesicles. It is my belief that the two are always associated. I believe that the prostate and vesicles are the primary focus in the genito-urinary tract and that the epididymitis is secondary, as it is in gonorrheal epididymitis.

Treatment. Unless there is active tuberculosis elsewhere in the body, keeping the patient pulled down, most cases do very well under hygienic treatment. I make sure that a man obtains out-of-door work, gets plenty of rest, fresh air, and good food. The old treatment of sending a man away on a sailing vessel for two years was and is good treatment. It is quite true that abscesses form in the epididymis in a great many cases, but these soften down and rupture spontaneously and, after having drained for some time, heal. As a rule there is not much discomfort with these.

I am very much opposed to epididymectomy for tuberculosis of the epididymis. The primary focus in the vesicle is not attacked and I feel that more harm than good is done by the operation. If one is to do anything in an operative way, I agree with Dr. Quinby[2] that a radical operation should be done, removing the epididymis, the entire vas and vesicles. Most men do so well under hygienic treatment that I feel it is not advisable to put a man through the radical operation. I have known two cases to die of miliary tuberculosis following an epididymectomy and one following the radical operation. Until we have more proof that the radical operation is advisable I shall continue to treat tuberculosis of the epididymis and vesicles purely by hygiene.

REFERENCES.

[1] Spooner, L. H.: The Bacteriology of Tuberculous Kidneys, Jour. Med. Research, Vol. xxxix, No. 1, September, 1918.
[2] Quinby, W. C.: The Treatment of Genital Tuberculosis in the Male, Jour. A. M. A., Nov. 30, 1918, Vol. lxxi, pp. 1790-1795.

Book Reviews.

Stedman's Medical Dictionary. By THOMAS LATHROP STEDMAN, A.M., M.D. Fifth Edition. Revised. New York: William Wood & Co. 1918.

The fifth edition of Stedman's *Medical Dictionary* includes over fifteen hundred new titles and substitutes, for many of which, in addition to the system of abbreviation by initials which has been adopted by writers on war medicine and surgery, the war has been responsible. In this edition, an extensive revision has been made of the pharmaceutical terms in order that the titles and doses of all the official preparations may conform with the latest editions of *Pharmacopoeia* and *National Formulary*. This volume is an illustrated dictionary of words used in medicine, including dental, veterinary, chemical, botanical, electrical, life insurance, and other special terms; anatomical tables of the titles in general use, and those sanctioned by the Basle Anatomical Convention; official pharmaceutical preparations, chemical and therapeutic information about mineral springs in America and Europe, and a comprehensive list of synonyms.

THE BOSTON
Medical and Surgical Journal

Established in 1812

An independently owned Journal of Medicine and Surgery, published weekly under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, JULY 29, 1920

Editors

Robert M. Green, M.D., *Editor-in-Chief and Manager*

George G. Smith, M.D., *Assistant Editor*

Walter L. Burrage, M.D., *For The Massachusetts Medical Society*

Advisory Board

Edward C. Streeter, M.D., Boston, *Chairman*
Walter P. Bowers, M.D., Clinton
Walter B. Cannon, M.D., Cambridge
Harvey Cushing, M.D., Brookline
Homer Gage, M.D., Worcester
Reid Hunt, M.D., Boston
Lyman A. Jones, M.D., Swampscott
Roger I. Lee, M.D., Cambridge
Robert B. Osgood, M.D., Boston
Milton J. Rosenau, M.D., Brookline
Alfred Worcester, M.D., Waltham

Subscription Terms: *$5.00 per year, in advance, postage paid for the United States, $6.56 per year for all foreign countries belonging to the Postal Union.*

An editor will be in the editorial office daily, except Sunday, from twelve to one p.m.

Papers for publication, and all other communications for the Editorial Department, should be addressed to the Editor, 126 Massachusetts Ave., Boston 17. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish free to the author, upon his written request, one hundred eight-page reprints without covers, or the equivalent in pages in the case of articles of greater length.

The Journal does not hold itself responsible for any opinions or sentiments advanced by any contributor in any article published in its columns.

All letters containing business communications, or referring to the publication, subscription or advertising department of the Journal should be addressed to

Boston Medical and Surgical Journal
126 Massachusetts Ave., Cor. Boylston St., Boston 17, Massachusetts

BOTULISM.

During the latter part of 1919 numerous cases of poisoning, and a number of deaths, were reported in different parts of the country as a result of eating olives, or certain canned vegetables. These deaths were caused by botulism—literally "sausage poisoning."

Botulism, according to a bulletin prepared by the Department of Medical Information of the League of Red Cross Societies, and made public by the American Red Cross, has in the past usually arisen from consumption of home-preserved food which was not correctly packed, but events such as those noted above had led recent investigators to conclude that infection with botulism through commercially-packed foodstuffs, while rare, is by no means impossible.

The obvious method of protection against botulism, which has a high mortality, is to refrain from eating preserved foods which are noticeably spoiled. The presence of the Bacillus botulinus is usually indicated by a sour odor, or by some other plain evidence that food containing it is unfit to be consumed, while the presence of the bacillus has been noted only in foods which have been prepared for preservation in cans, jars, or other containers, ordinary prudence demands the rejection of any comestible which, by smell, taste, or appearance, shows signs of being spoiled.

Bacillus botulinus was first isolated by van Ermengem in 1896. It is of the anaerobic type; that is, it cannot exist where oxygen is present. When taken into the human system, it lodges in the digestive tract, and the toxins produced there spread over the body. Inasmuch as the first symptom of botulism do not appear until it is too late to employ the stomach pump or emetics, and since the only treatment is a serum of doubtful value, the fight must be devoted mainly to keeping up the sufferer's strength and combating the various symptoms as they occur.

Botulism is somewhat similar, in its early symptoms, to encephalitis lethargica, a disease which is very much in the popular mind at present; and an epidemic of the latter disease in England in 1918 was wrongly diagnosed as botulism, supposedly due to the war diet of the people. The onset of both diseases is acute. The first noticeable symptoms are similar, and consist of dimness of sight, often followed by coma. But there the resemblance ends. Encephalitis produces a slight rise of temperature; botulism usually does not. There are rarely two cases of encephalitis in the same household, while botulism usually affects at the beginning several people, all of whom have partaken of infected food. Finally, death from botulism usually occurs within four days, accompanied by varying symptoms while encephalitis tends to produce prolonged coma, and to become in a sense chronic.

Food poisoning, which also may result from eating bad food, is not associated with the presence of the botulinus bacillus, but in the past, in the absence of exact methods of diagnosis, it often was confused with botulism. Figures for the United States show only 150

cases of botulism, with 97 deaths, in the whole history of the disease here.

Food containing the Bacillus botulinus may be either animal or vegetable, and in many cases the death rate from eating poisoned vegetable products has been excessively high, due probably to the fact that preserved vegetables often are served raw, as in salad, while meats are more apt to be cooked, with a constant diminution of the virulence of the botulinus germ. German statistics of several epidemics show mortality in cases of consumption of infected vegetables to be as high as 52.3%, that from smoked meat and bacon being 19%, from sausage 17%, and that from fish and lobsters only 10%, the mortality tending to diminish in proportion to the probability of the food being cooked before consumption. A curious fact in relation to the epidemics of botulism arising from the eating of poisoned olives is that in cases where the olives had been washed before they were eaten, the disease appeared in milder form, or did not attack those persons who had taken the precaution to wash their olives.

The sterilizing methods adopted by the corporations which distribute preserved foods seem largely to eliminate the possibility of botulinus infection. It is usually in the cases of products of isolated unscrupulous packers, or where foods which have been rejected by the original consignees are sold at low prices in second-rate stores that there is danger of botulism. The bacilli of this disease may develop in home-preserved foods through insufficient sterilization of the food or of the container; or through the use of faulty methods of excluding air from the sealed container, thereby allowing putrefaction.

The great majority of the commercially prepared foods are absolutely safe when they leave the packing plants; but the public should insist on getting undamaged containers, since even the best of these receptacles may be damaged by careless handling. The proportion of safety in tinned foods is shown strikingly by an experiment carried on at Harvard University, where a lunch club experimented over a period of 16 months with 1750 cans of food. Absolutely no ill effects were discovered as a result of this investigation.

The botulinus bacilli are not found in raw foodstuffs, or in products which have been correctly prepared. Observance of scrupulous care in preserving food for future consumption eliminates the possibility of the spreading of botulism, which, while it fortunately is not of frequent occurrence, nevertheless is one of those maladies with which medical science has not yet definitely learned to cope.

VOCATIONAL TRAINING IN HOSPITALS.

THE radical changes which are taking place in the treatment of psychoses offer hope and promise for the future welfare of patients suffering from nervous and mental disorders. In promoting this work, the problem of dealing with ex-service men has brought to our attention the need which exists for increased effort to evolve some method by which patients may be benefited permanently and made economically independent. Until recently, a psychotic patient was discharged as socially cured when he no longer presented a-social or anti-social symptoms in the hospital environment; he was sent back to the very environment in which his psychosis developed, and, though dependent on his family for support and with no definite productive employment, it was expected that he should be able to adapt himself satisfactorily to his surroundings. In the majority of cases a relapse was the inevitable result of this course of procedure.

An experiment being made by the Federal Board for Vocational Education at the Government Hospital for the Insane, St. Elizabeth's, Washington, D.C., and at Manhattan State Hospital, New York City, may solve the problem to the better advantage of the individual and society. The plan of the Federal Board is to start a man's vocational training while he is still under treatment in a hospital, continue this training in a training center under proper supervision, and return him to his home, not only with a trade, but with work which will render him economically independent and furnish a stimulus for increased endeavor. It is probable that more often than not the adjustment to social environment will remain permanent under these circumstances. If the results obtained by these first units be encouraging, similar units will be started in all hospitals caring for a sufficient number of ex-service men with nervous and mental disorders.

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE

BACTERIA AS A FACTOR IN FUTURE WARS.

An interesting possibility to be considered by the leaders of future wars is the use of bacteria as a weapon against enemy forces. In speaking before a company of British and American scientists at a dinner tendered in his honor by the officers and board of governors of the American Hospital in London, this possibility was suggested by Dr. Charles H. Mayo of Rochester, Minnesota. Is it not feasible to imagine that the next war may be a contest decided by invisible organisms, a war conducted by the dropping over cities of capsules of bacteria which have the most destructive effects? In this event, it would be the physician's task to prevent casualties from the germ bombs of enemy powers, and doctors, rather than military experts, would become the field marshals of future wars. Such conduct of future warfare is appalling to contemplate, yet not inconceivable.

MEDICAL NOTES.

The Rockefeller Institute for Medical Research.—The Board of Scientific Directors of The Rockefeller Institute for Medical Research has announced the election of Dr. Winthrop J. V. Osterhout as a member of the Board of Scientific Directors to succeed Dr. Theodore C. Janeway, deceased.

The following promotions and appointments have been announced also:

Dr. Alfred E. Cohn, hitherto an Associate Member in Medicine, has been made a Member.

Dr Peyton Rous, hitherto an Associate Member in Pathology and Bacteriology, has been made a Member.

Dr. Donald D. Van Slyke, hitherto an Associate Member in Chemistry, has been made a Member.

Dr. Francis G. Blake, hitherto an Associate in Medicine, has been made an Associate Member.

Dr. John H. Northrop, hitherto an Associate in Experimental Biology, has been made an Associate Member.

Dr. James H. Austin, hitherto an Assistant in Medicine, has been made an Associate.

Dr. Harry W. Graybill, hitherto an Assistant in the Department of Animal Pathology, has been made an Associate.

Dr. William C. Stadie, hitherto an Assistant in Medicine, has been made an Associate.

The following have been made assistants: Miss Helen L. Fales, Chemistry; Dr. Philip D. McMaster, Pathology and Bacteriology; Miss Marion L. Orcutt, Animal Pathology.

The following new appointments have been announced: Dr. Harry Clark, Associate Member in Pathology and Bacteriology; Dr. Pierre L. du Nouy, Associate Member in Experimental Surgery; Dr. Paul H. deKruif, Associate in Pathology and Bacteriology; Dr. Lloyd D. Felton, Associate in Pathology and Bacteriology; Dr. Rudolph W. Glaser, Associate in the Department of Animal Pathology; Dr. Carl A. L. Binger, Assistant in Medicine; Dr. Ralph H. Boots, Assistant in Medicine; Dr. Louis A. Mikeska, Assistant in Chemistry; Dr. Charles P. Miller, Jr., Assistant in Medicine; Dr. Eugene V. Powell, Assistant in X-ray; Dr. Leslie T. Webster, Assistant in Pathology and Bacteriology; Dr. Goronwy O. Broun, Fellow in Pathology and Bacteriology; Miss Katharine M. Dougherty, Fellow in Pathology and Bacteriology; Dr. André L. E. Gratia, Fellow in Pathology and Bacteriology; Mr. Thomas J. LeBlanc, Fellow in Pathology and Bacteriology; Dr. Giovanni Martinaglia, Fellow in the Department of Animal Pathology; Mr. Henry S. Simms, Fellow in Chemistry.

Dr. Marshall A. Barber, hitherto an Associate in Pathology and Bacteriology, has accepted a position with the U. S. Public Health Service to do field work in the Malaria Research Laboratory, Memphis, Tennessee.

Miss Angelia M. Courtney, hitherto an Associate in Chemistry, has accepted an appointment to do chemical research work in the Medical School of the University of Toronto.

Dr. Carl Ten Broeck, hitherto an Associate in the Department of Animal Pathology, has accepted an appointment as Associate Professor of Bacteriology with the Peking Union Medical College.

Mr. Earl P. Clark, hitherto an Assistant in Chemistry, has accepted a position with the Bureau of Standards, Washington, D.C.

Dr. Ferdinand H. Haessler, hitherto an Assistant in Pathology and Bacteriology, has accepted an appointment as Resident Pathologist in the Department for Nervous and Mental Diseases in the Pennsylvania Hospital at Philadelphia.

Dr. Arthur B. Lyon, hitherto an Assistant in Medicine, has resigned to enter private practice.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending July 10, 1920, the number of deaths reported was 158 against 218 last year, with a rate of 10.19 against 14.28 last year. There were 28 deaths under one year of age against 37 last year.

The number of cases of principal reportable diseases were: Diphtheria, 41; scarlet fever, 18; measles, 70; whooping cough, 45; typhoid fever, 2; tuberculosis, 52.

Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 4; measles, 1; whooping cough, 3; tuberculosis, 9.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; measles, 1; whooping cough, 2; tuberculosis, 19.

Included in the above were the following non-residents: Diphtheria, 1; scarlet fever, 1; tuberculosis, 3.

THE BOSTON FLOATING HOSPTAL.—The Floating Hospital of Boston opened its season of activities on June 29, with Dr. Henry I. Bowditch as physician in charge. On his consulting staff are the following physicians: Charles W. Townsend, Robert W. Hastings, Richard M. Smith, John Lovett Morse, George W. Gay, Fritz B. Talbot, William E. Fay, Arthur C. Jelly, Maynard Ladd, William T. Counellman, J. Herbert Young.

The visiting staff is composed of Doctors Elmer W. Barron, Eli Friedman, Paul W. Emerson, Edwin T. Wyman, Bessie T. Strongman, and an auxiliary staff of Dana W. Drury, otologist; James S. Stone, surgeon; William E. Ladd, assistant surgeon; Edwin H. Place, contagious diseases; George D. Cutler, assistant surgeon; William T. Counellman, pathologist; John Henry Bufford, dermatologist; Frederic W. Howe, director food laboratory; Walter C. Miner, stomatologist; Cleaveland Floyd, director bacteriological department.

The resident physician is Dr. Hyman Green, and others of the staff include: Chief of food laboratory, Miss Dora Sprague; director research laboratories, Alfred W. Bosworth; senior house officers, Basil B. Jones, M.D.; Paul C. Carson, M.D.; and Eugene C. Peek, M.D.; junior house officers, Harry S. Gross, M.D.; Robert C. Bates, M.D.; and Robert C. Stickney, M.D.; senior externe, Salem K. Siebler, M.D. The superintendent of nurses is Miss Evelyn Bradley.

During this season preventive work is to be emphasized, and this work will be increased by means of a nutritional clinic arranged for the benefit of children up to the age of eight years.

DEPARTURE OF BOSTON PHYSICIAN TO BERMUDA.—Dr. E. Eugene Walker, Assistant Resident Physician at the Massachusetts General Hospital, is returning to Bermuda to take up the practice of internal medicine. For the past seven years Dr. Walker has been associated with the Massachusetts General Hospital and the Massachusetts Charitable Eye and Ear Infirmary in an executive capacity.

BEQUEST TO THE NEWTON HOSPITAL.—The will of the late Charles I. Travelli of Newport contains a bequest of twenty thousand dollars to the Newton Hospital.

POSSIBLE FREEDOM FOR PENIKESE LEPERS.—It has been reported that Dr. Bernard F. Carey, State Deputy Health Commissioner, believes that two of the sixteen lepers under treatment at the state colony on Penikese Island have been cured by the use of chaulmoogra oil. In order to determine whether it will be safe to set them at liberty, plans have been made for an examination by a board of specialists. The two patients have received treatment for three years; all lesions have disappeared and repeated tests for the presence of the disease have met with negative reactions. Although other lepers have been discharged to go home to China or the Cape Verde Islands, and even to New York, this would be the first instance of a leper being set at liberty in Massachusetts.

The board of examiners will consist of Dr. Victor Heiser of New York City, who first introduced chaulmoogra oil into the country from India for the treatment of leprosy; Dr. Victor Safford of Boston, Dr. Algernon Coolidge of the Massachusetts General Hospital, D. Townsend Thorndike, and Dr. F. H. Parker.

Chaulmoogra oil is used internally in capsules, or, in case of stomach disturbances, by subcutaneous injections. Two other remedies in use in the Penikese leprosarium are sodium morrhua and sodium gynocardanate. The report that the Government has obtained title to Cedar Keys, three small islands off the west coast of Florida, for the establishment of a national leprosarium, is of interest to Massachusetts, as the completion of such an institution would probably relieve the State of the Penikese colony, which costs approximately two thousand dollars a year for each patient.

Massachusetts Commission for the Blind.—The Massachusetts Commission for the Blind recently submitted a most interesting report for the year ending November 30, 1919.

Since the cessation of the war there have been great changes in the methods of educating the blind. The whole policy is shaped today on the assumption that a person who suffers merely from lack of sight may be trained to work in straight competition with the sighted. If he is otherwise normal, his handicap of blindness may, by modern methods of instruction, be reduced to a minimum.

Shop committees have been organized to meet and deal with the complaints of blind workers and the innumerable complaints of previous years have been brought to the irreducible minimum.

An interesting innovation was made during the last year in the form of an appropriation of $10,000 for relief. This enabled the Commission to deal with a peculiarly difficult problem, the question of the blind mendicant. The Massachusetts Commission for the Blind offered assistance to all blind mendicants in the State on condition that they should come off the streets. Some responded, but others refused on the ground that they were getting a good living. So long as the public continues to support such people on charity and misplaced sympathy, it will be difficult for any commission to remove them from the street.

The report of the supervisor of work for children shows that that branch of the work is being given careful attention. As soon as each case is reported the home is visited in order to make sure that nothing has been neglected which might possibly give or restore any degree of eyesight, to learn the home environment and to give the parents consolation and advice in the training of these little ones. One cannot estimate the amount of harm to the blind child which may result from misdirected kindness in early life.

The blind citizen of Massachusetts does not rate himself as an object of charity. He is unwilling to think of himself as a mere burden upon the community. He realizes his handicap through loss of sight, but he is all the more intense in the use of his other senses, and all that he demands from the world is opportunity to make his way. This attitude on the part of the blind person ought not to be treated lightly. Whatever system is developed for his aid, it should take into account that desire for self-help. It should seek in its process to foster the blind person's willingness to help himself. It should, therefore, put opportunity in his way and guard him against the competition of seeing persons, where such competition would, because of his handicap, drive him beneath the line of self-support.

Massachusetts has already embarked upon a wise method of assisting its blind. It has offered commercial opportunity through the development of shops for the making of brooms, basketry, mops, rugs, and other articles. The results obtained fully justify the undertaking.

Week's Death Rate in Boston.—During the week ending July 17, 1920, the number of deaths reported was 162 against 200 last year, with a rate of 10.45 against 13.30 last year. There were 20 deaths under one year of age against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 33; scarlet fever, 19; measles, 35; whooping cough, 52; typhoid fever, 2; tuberculosis, 39.

Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 2; whooping cough, 4; typhoid fever, 1; tuberculosis, 12.

Total deaths from these diseases were: Diphtheria, 1; whooping cough, 2; tuberculosis, 6.

Included in the above were the following non-residents: Tuberculosis, 2.

New England Notes.

New England War Relief Funds.—The New England branches of the French Orphanage Fund and the Italian Fund have announced the following contributions:

French Orphanage Fund	$606,456.42
Italian Fund	330,385.42

The Massachusetts Medical Society.

AFTER DINNER SPEAKING AT THE ANNUAL DINNER OF THE MASSACHUSETTS MEDICAL SOCIETY, AMERICAN HOUSE, JUNE 9, 1920.

THE President, Dr. Alfred Worcester, called the meeting to order. The Rev. Francis E. Webster of Waltham asked the blessing.

The President, DR. ALFRED WORCESTER: Fellows of the Massachusetts Medical Society: One cannot help wondering what the medical associations of our sister states are doing for speakers this week at their anniversary dinners. If the newspapers are to be believed, most of the states have let their favorite sons go off hunting in the Middle West (applause). We are more fortunate. Massachusetts' favorite son is waiting for Chicago to come to him (prolonged applause), and when the delegation of notification comes to Massachusetts, they will find our faithful Governor either working through the long day at his task of safeguarding the interests of the Commonwealth or, if they come in the evening, they will find him generously giving his encouragement and inspiration to such associations as ours (applause). I regret that the Governor has not yet applied for admission to the Massachusetts Medical Society. I am firmly convinced that he is fully qualified. He has proved his ability in his treatment of threatening disorders of the body politic. Those of us who come down to Boston only in this month of June cannot fail to have noticed the successful treatment which the Governor and his Police Commissioner have given the police force of Boston (applause). We who are struggling to reduce the extra avoirdupois of our patients, and incidentally our own, wish that we might learn from him what wonderful remedy has been applied to decrease the girth of the average policeman of Boston (applause and laughter). The elixir of youth seems also to have been bestowed upon them. By next year I doubt not our Governor will be found by our censors fully qualified to join the Society, and I ask you now to drink to the health and long life of Governor Calvin Coolidge. (Applause, rising.)

His Excellency, The Governor, CALVIN COOLIDGE: Mr. President, Ladies and Gentlemen of the Massachusetts Medical Society: It is with very deep appreciation that I acknowledge the compliment that has been paid to me by your President in suggesting that I have some of the qualifications for membership in so learned and honorable a society as that of the Massachusetts Medical Society. Those of us who know it most respect it most, and if it is lacking anywhere for that reverence and respect that are its due, it is in places that are ignorant of the good work that it does and of the high-minded, self-sacrificing men and women that make up its membership. That was exemplified especially when the call came to you to take your part—your professional part—in the support, the defense and the maintenance of our American nation. For out of some 5,500 physicians of Massachusetts about 1,700, or nearly 30 per cent., joined under the national colors or those of our Allies in order that by their professional ability and skill they might do their part in sustaining the cause of civilization; and it was an honorable part that you bore, relieving insofar as it could be relieved by medical skill, the misery that follows in the trail of war, binding the wounds of those who had suffered in battle and cheering always with your confidence those who otherwise tended to become discouraged.

But I did not come here especially to speak of your experience and our experience in the great enterprise and sacrifice through which America and the world has passed. It is over now for the most part, and I think everyone realizes that we are at peace and are in the enjoyment of a peace that has come from the victory of righteousness—at least everybody outside of some circles in Washington knows that peace has arrived (laughter), and looking backward upon the experience through which our Nation and the other nations of the earth have just passed, and looking around upon conditions as they are at the present moment, I believe that our Nation has a good cause for a feeling of optimism and that there ought not to prevail the discontent of which we hear, and certainly there is no reason, as far as I can discover, for any general feeling of discouragement. I know that all human conditions are comparative. If there is any of you that does not believe that, see what happens in your family when some of the women in the neighborhood deck themselves out with new Easter headwear. And I say that there is a reason for op-

timism because of the comparative condition in which America finds herself now as to other nations that have recently been associated with us. Out of the over seven and a half millions of lives that were taken in the great war America happily was called upon to contribute as a result of loss in battle only about fifty thousand men. I know that that does not detract at all from the sorrow of those dear ones who have gone, but looked at as a whole, we have every reason to rejoice that we were spared the great sacrifice and loss of life that came to other nations that were in the great conflict. Economically, of course, we have been called upon to bear our share of the burdens, but that again is not one that weighs heavily upon the shoulders of the Nation. The expenses of the war are estimated at about 190 billions of dollars, but our expenditures are between 20 and 25 billions—a large sum, of course, but there again in comparison with the resources, and the strength, and the power of America, not one under which we need to feel that we are going to be burdened beyond our endurance to meet it, pay it and bear it. Economically, America at the present time is much better off than those European nations with whom we have been associated. If we can believe anything of the reports that come from there, there is a condition of idleness in many of them. There is a condition of heatlessness in most of them during cold weather due to a lack of the necessary fuel. They are capitalless so far as the necessary capital is required with which to meet their present conditions and in some of them—especially in Russia—they are in a condition of absolute and utter lawlessness. Now against that you know the conditions in America. We are able to find employment for all those who desire to work. We are fairly well able to take care of capital requirements and, although I don't know what is going to happen in New England during the next cold season, I have every reason to believe that we shall not suffer very much from lack of fuel to take care of us. And, of course, all throughout America with minor exceptions that do not need to be designated even, there is a condition of law-abiding peace on the part of her peoples, of industry fairly well carried on, and thrift that makes it look as though we were going into a condition of great prosperity.

I am not unaware that there is a certain discontent that pervades all sorts and conditions of society. There is a kind of discontent that ought to be encouraged because it is the foundation of all progress and all advance in human development. There are those that are not contented with the amount of education that they have, and they are therefore applying themselves in our schools and institutions of learning; and that is to the public advantage. There are those that are discontented with the general condition, think that they are not living the lives that they ought to live, and they are changing their methods of life, joining the church, perhaps, and determining to live better in the future; that is for the advantage of the public. There are those that think they are not accomplishing enough from their efforts and they are determining that they will work a little harder in the future and do a little more and produce a little more and be more industrious than they have been in the past; that is a discontent that is for the public welfare. These sources of discontent are discontent with ourselves, and wherever you find that as a condition you have the foundation laid for a betterment of mankind (applause). There is another kind of discontent that doesn't look so encouraging; it is the discontent of those who want to profit without any effort; it is the discontent of those who want to control without any ownership, and to rule without legal authority and responsibility, and in this Nation of ours which we boast is made up of kings, they want to rule without being subjects; these are the people that are discontented with others, and that kind of discontent isn't one on which you can base any progress or one on which we can expect the world to go forward.

I have sometimes wondered if people would examine the conditions that are around them, if they would finally realize that there was any reason for great discontent in America. What is there in our form of government or in our institutions that men really want to change that they have not the power to change if they so will? It is the boast of Americans that here the people rule and the will of the people is supreme, and if there is any general reason for making any change in our governmental affairs and in our institutions, there is at hand a method of securing it—orderly under the Constitution and according to the laws of the land (applause). I am aware as you are that our Government is not perfect. The plan of it is fairly perfect, but it is administered by hu-

man beings like you and me, and their administration partakes of human infirmities and that always has been so and always will be so; but that is no reason for undermining the foundation of our institutions or attempting to overthrow our Government. Our Government is the result of great sacrifice, of long and careful study and the experience and the intelligence of generations of men. It may be that they ought all to be cast aside; it may be that those who have had no experience with it, who have no background of comprehension of it, can come here from some foreign country and instruct us in the changes that ought to be wrought in it or in the suggestion that it ought to be done away with altogether, but scientifically looked at, I do not believe that thinking men and women would admit that such was probably the case, and I think there is a disposition on the part of everybody that thinks of these things, to support our Government and defend it, come against it what may. (Applause.)

It is natural for humankind to be discontented with their economic condition. It is especially natural that after a season of great prosperity there should be more discontent in that direction than ever before, because success along that avenue breeds in those who are the recipients of it a desire for greater and greater success, and you have no doubt noticed the phenomenon that as incomes have been increased during the past few years, as wages have risen and risen and risen, instead of bringing satisfaction and contentment to those who have received them they have had rather the opposite effect of producing a desire for greater and greater increases. That is a natural result, and those who know anything of history say it is exactly what would be likely to happen, but that is no reason for undertaking to overturn our economic system; it is no reason for saying that the relationship on which our economic system is founded ought to be done away with and some other system substituted for it, because there again, as in our Government, if you look at our economic system, you will see that no where and at no time has there been such prosperity—material prosperity—as there has been under the economic system that exists in America. Part of this discontent is the result of a class consciousness. We recognize no class in America. There are different conditions and different stations and different employments. Some are physicians, others may belong to the legal profession, others are engineers, some are manufacturers; but we recognize no condition into which men are born and to which they are tied throughout the length of their lives; and any attempt that is made to mark out and set off conditions is an entirely artificial and fictitious designation of the people of America, and any laws or any institutions or any practices that we undertake to found upon such a supposition—they do not work and in the end bring us disaster.

We hear continually discussion about labor and capital, about the employed and the employer, but if we look at the matter a little more deeply, we would see that we have no class of employed and no class of employers here in this land of ours. The fact is that we are all employed, all of us working for someone else in some way or other, and all of us are employees or employers directly or indirectly, for when the humblest workman purchases his supplies at the corner grocery store, he is employing the grocer to serve him, he is employing the transportation workmen of the Nation or he may be reaching into the Orient and there employing those who are producing the article that he is about to consume. This is artificial distinction. When we try to legislate artificially and fictitiously our results are not what we want to secure. It would be more to our advantage if we would consult always and at all times what is beneficial for the public and look at that alone rather than to try and see if we can't do something for an assumed class here and an assumed class there, because those activities are bound to fail, and in the public welfare we have to remember that the welfare of one is the welfare of all, the welfare of all is the welfare of each individual.

We gain our progress in civilization not altogether from an assumed equality but to a great extent from variety. I said a moment ago that you had your profession, and others have their professions. Civilization and learning and science are so broad now that no one undertakes to comprehend them all, and it is an age of specialists,—it is an age of division of labor, and it is only as we work along lines of that kind that we are able to make any progress; and that has laid upon us a new burden that did not exist in generations that have gone before when each individual was self-sustaining

UNIVERS OKLA SCHOOL

and could take care of himself, and if he didn't, it mattered very little to those who were about him. It matters a great deal now, and that has put a new duty upon citizenship and one that must be realized and met and fulfilled, and we have not the privilege that we had then to refrain from carrying that occupation into which we have cast our lives. What do you think would happen if an organization like your Society should say, "We will do no more work until something has been done in government or economic relations that is to our satisfaction"? You see what happens now when those who have cast their lot in transportation say, "We will refrain from doing the work that we are engaged to do." You can imagine what would happen if those who are engaged in agriculture should say, "There, we will stop our production until we have accomplished something by an exertion of a pressure of that kind, that we desire to accomplish either in a governmental way or in an economic way." That is not government—that is what they refer to as mass action. And unless we can carry on our affairs orderly, peacefully, according to the laws of the land and under the Constitution, and each bearing the burden that the duty he has assumed puts on him to bear, we can't sustain the kind of a civilization that we have chosen to make our own, it will break down and we shall find ourselves in a condition of anarchy on the one hand or despotism on the other.

So it is of the utmost importance, living under the conditions of modern civilization that each and every one of the parts coöperate with each and every other part. (Applause.) Economically, of course, that is the best form of civilization that produces most because it is production that sustains us all, and it is production and the increase and the supply of capital that sustains our civilization, and there again haven't we a right to ask those who are criticizing us, whether they can show anywhere else on earth a condition of production and a condition of civilization and a general benefit to all the public that equals what we have here in America? (Applause.) And unless they can show it, haven't we a right to reply to them that the changes and the reforms if they so desire to designate them, which they propose, are not anything that we desire to put into operation? I think that we want to support our Government. I think that Americans are determined to support that economic relationship under which they have prospered for now nearly 300 years. I know that, although we are often charged with it, Americans think of something more than a material prosperity, they want that and they ought to want it because on it rests our civilization, but they use it ultimately not as an end in itself, but as a means, as a ministration to a higher form of civilization. What is it that gathers societies like yours? What is it that founds hospitals to minister to the suffering? What is it that establishes libraries, great institutions of learning, and builds places of religious worship? It is the result of the material prosperity that we see all around us, which is used not as an end in itself but as a means to administer to all that is highest and noblest in mankind.

Seeing the condition of America, the soundness I believe of its Government, the prosperity of its economic relations—better than they are in any other country—on earth—it seems to me that the message I ought to bring to you is one of hope, optimism and expectation, and coupled with that goes also the message of duty.

As we have our prosperity and our success, it is our duty to use them for the assistance of the people of our own country and for the alleviation of the suffering of other countries, and with all this before us, I firmly believe that the earth is coming into a new season and that America is to have the opportunity to lead it on, not for what we can get out of it, but for the service that we can render first to Americans and then to the other peoples of the earth. (Prolonged applause.)

The President, DR. ALFRED WORCESTER: Twenty-five years ago when I had the honor of delivering the annual discourse, I was under instructions given me by dear old Doctor Cotting, who fifty years before had been the orator of the day and afterwards president of the Society. He told me that whatever I said in the annual discourse, let it begin with glory to the Massachusetts Medical Society, let that be the middle theme and let that be the ending. Now you have had an orator today to whom I did not dare give any advice, but I told him that it would not be enough for him to deliver that discourse, he must come to our dinner and stand here ready for the testimony of our admiration for his gallantry, for his skill, for his devotion, and of our love for him as a man—Dr. Hugh Cabot. (Applause.)

DR. HUGH CABOT: Mr. President and Members of the Massachusetts Medical Society: As you see, the prodigal always returns and as you have seen, the fatted calf has been duly prepared. I might have known that Dr. Worcester would have attended to the calf.

In continuation of the line of thought which I was following this morning in regard to the relation of the practice of medicine to the community, I want to point out to you my reasons for believing that this adjustment should be made differently in different sections of the country. It is of course trite to say that conditions differ in different sections of the country, but there are certain fundamental differences which are bound to influence development and for this reason we shall be well advised not to try to put into practice in one part of the country a method which has proved satisfactory in another without taking this factor of different environment into account. One of the fundamental things which is going to influence the relation of medicine and the community is the varying types of institutions of education and institutions of learning—they are not the same thing—which exist in various parts of the country. I have been much impressed in the past year with the very different relation of a state university to the problem of education from that borne by the endowed university. The state universities tend, under the pressure of those who have created them, that is to say, the Legislatures, to become more and more technical schools or groups of technical schools. They are likely to become chiefly concerned with the business of turning out people who can earn their living and they tend to become deified trade schools. On the other hand, endowed universities are much more likely to be able to concern themselves with those rather elusive things which one terms culture. No comparison need be drawn between these two different kinds of educational institutions, but it is none the less certain that they are bound to influence the conditions which exist about them. The relation of the state university to the state is a very intimate one, whereas it is likely, as we all know, that the endowed university will bear a very loose if any relation to the state. It therefore follows that in the state university there exists a piece of machinery which can be made to do certain work which is quite impossible in states where no such institution exists. Now though you may believe, as I believe, that the endowed university with its ideals of culture has a more inspiring effect upon mankind, it is nevertheless true that in the building up of a medical school which shall affect the relation of medicine to the state, the state university is a very valuable engine. Such a medical school is in a position to affect public opinion and get results more promptly than can be done by an endowed university.

I am strongly of the opinion that the state universities are likely to try experiments in state medicine, if you use the phrase not too strictly, which will be very interesting. The growth in number and strength of the state universities throughout the country has been very rapid and more and more of them now have a medical department and associated with it a university hospital, which become an important source of experimentation in community medicine. For many years there has been in Michigan a law which has been copied by several other states, authorizing the sending to the University Hospital any child born in the State with a deformity which can be remedied by medical care. These children may remain at the hospital as a charge upon the State until their condition has been improved as far as possible. The hospital is authorized to draw upon the State for the expenses incident to the care of these children. The law also authorizes the sending to these hospitals by recognized authority, which consists of judges, town officials and registered physicians, of great numbers of other patients who need care which they cannot afford and which the community ought to supply. The expenses for these patients are chargeable directly to the town or county and in this way the hospitals can be maintained on a satisfactory basis and become engines for great benefit and they make for close relations with the community.

But there is another aspect of this relation which is also important. More and more the State, through its officials, is coming to regard these university hospitals as disinterested sources of professional opinion and in this way may well become the sources from which physicians may be drawn for the care and management of medical institutions on a community basis. The University of Michigan is now preparing to try an experiment based on its relation to the State which appears to me interesting. There are many towns without a physi-

cian, a condition which I believe exists in most states. There is at present no machinery by which these towns can be supplied, and during the past year the president of the University of Michigan has been in receipt of many letters from town officials asking assistance in this problem. We are now engaged in working out a plan by which the University through its hospital shall give assistance in this dilemma. It is planned to attach to the University Hospital an additional number of young physicians who as part of their medical training may be sent out into the country to help in this problem. When a town reports that it is without a physician, if such report upon investigation proves to be true and the Medical Society is unable to help in the matter, it is planned to send out one of these physicians and equip him with one or more nurses and a small laboratory. The salary of this physician, who will remain a member of the University Hospital staff, is to be paid by the University which in turn collects from the town. It has been suggested that we should allow these physicians to practice medicine in the ordinary way and to collect their fees which would, however, be turned over to the University to reimburse it for its expenditure, the town finally having to foot only the balance of the bill. It is expected that these physicians would only remain for short periods, precisely as they move from one part of the Hospital service to another under present conditions. During that period of country service they would have the support, both physical and moral, of the University staff and arrangements would be made with nearby cities and towns for proper consultation.

This sort of experiment to which I have referred is most readily carried out through the medium of the state university. But it does not appear to me to follow that it can be done only in this way. Clearly the problem of maintaining the proper adjustment between the medical practitioner and the population is one of first class importance and equally clearly it is not a matter which will look after itself. At the moment, physicians, like the rest of the population, are seeking large centers to the disadvantage of the rural districts. The situation is probably temporary, but its duration cannot be predicted or even guessed at. It appears to me to be a matter of vital concern to the state medical societies, that the distribution should be maintained in a reasonably normal way. It is not impossible that the state medical society might take up this problem and deal with it through its influence on existing medical institutions. It appears to me not chimerical to hope that a medical society could arrange with the great metropolitan hospitals to deal with this question as we are trying to deal with it in Michigan. Obviously, the machinery must be different and probably the task will be difficult.

I throw this out simply as a suggestion but am clearly of the opinion that if it can be done by a state society, it will be done by the Massachusetts Medical Society.

Obituary.

MAJOR GENERAL WILLIAM C. GORGAS.

Major General William C. Gorgas, former surgeon general of the United States Army, died at Queen Alexandra Hospital in London on July 4, 1920. The immediate cause of his death was apoplexy, the ultimate cause, Bright's disease. General Gorgas was born in Mobile, Alabama, on October 3, 1854, the son of General Josiah Gorgas. He was graduated from the University of the South at Sewanee, Tennessee, in 1875, and from the Bellevue Hospital Medical College in 1879, when he joined the house staff of the Bellevue Hospital.

General Gorgas was considered one of the world's foremost authorities on military medicine and surgery. In the past ten years his services were sought to fight plagues in many parts of the world. When the typhus epidemic began in Serbia during the war, an effort was made to have him undertake the campaign against it, but at that time he was needed to direct the medical and surgical work for the American Army in France.

He fought and defeated the malarial mosquito in Panama, and thus made possible the building of that great waterway. He dislodged yellow fever from its century-old stronghold in Havana, and under the direction of the United States Government and the Rockefeller Foundation supervised campaigns against that disease in Central America, Peru and Ecuador. On the invitation of the British Government he went to South Africa in 1913 to establish sanitary conditions in the Rand, as a result of which he received high honors from the medi-

cal profession in London, and Oxford University conferred a degree upon him.

In 1914 General Gorgas became surgeon general of the United States Army. He reached the age limit while still on duty in France, in 1918, and retired from active service at the termination of the war. In 1919, he directed a yellow fever commission organized by the Rockefeller Fonndation, and made an extensive tour of Central and South America to direct the work of eradicating yellow fever from some of its breeding centers.

General Gorgas was an associate fellow of the College of Physicians and Surgeons, Philadelphia, and a member of a number of scientific organizations. In 1908 the honorary degree of doctor of science was conferred upon him. He was decorated by the French Government and made a commander of the Legion of Honor, and was knighted by King George of England. British military funeral services were held for General Gorgas at St. Paul's Cathedral, London, on July 9.

General Gorgas is survived by his wife, whom he married on September 15, 1885, and who was Marie Cook Coughty of Cincinnati, Ohio.

Correspondence.

BISMARCK, PIROGOFF, AND THE GERMAN EMPIRE, OR HOW THE MAP OF EUROPE MIGHT HAVE BEEN CHANGED THROUGH THE APPLICATION OF A SPANISH FLY BLISTER.

Prout's Neck, Maine, June 28, 1920.

Mr. Editor:—

The following account of Bismarck's experience of medical attention in Russia is taken from "Bismarck the Man and Statesman," an autobiography.

In June, 1859, after Bismarck had been riding at the riding school in St. Petersburg, he returned home without his customary furs, after having stopped on the way to watch the drilling of some soldiers. The next day he was attacked by general rheumatic pains which subsided except for trouble in the left leg where he had received a previous injury.

Dr. Walz, who had been recommended by the former Grand Duchess of Baden, offered to prescribe for the ailment, which was not severe, and Bismarck hesitated to submit to any treatment. On being told that the remedy was a simple one, a blister over the popliteal space, he reluctantly consented to have it applied.

In four hours' time a large, deep burn of the knee resulted, and Bismarck found it impossible to remove all of the blister himself. He sent for Walz, who assured him that he could quickly remove what remained of the blister, which was stronger than was intended. The idea was given that this was the fault of the chemist.

Meanwhile the corrosive action kept up and intolerable pain set in. Bismarck made some inquiries and found that the chemist had put up the blister according to prescription, which contained a larger amount of cantharides than was usual. Walz, he ascertained was the son of the court confectioner at Heidelberg, and had failed in his medical examinations.

The action of the blister finally destroyed a large vein at the back of the knee, and Bismarck was on his way to Stettin by sea for medical consultation, when he found that the celebrated Russian surgeon, Pirogoff, was on the same vessel. After examination, Pirogoff advised amputation of the leg, and when Bismarck asked where the leg was to be taken off, Pirogoff pointed to a place far above the knee. Bismarck declined this amputation and sought further medical advice. After trying many kinds of treatment in vain, the leg was finally healed by recourse to the Baths at Nauheim.

On the way back to St. Petersburg in November, when Bismarck was visiting von Bülow at Hohendorf, a clot of blood, which had formed in the injured vein of the leg, became detached and was carried to the lungs and an acute inflammation was set up.

Physicians thought the outcome would be fatal, but after a month of critical illness health was partially restored. Bismarck speaks as follows concerning this illness:

" . . . satisfied on this point, I anticipated my end with that calmness which is induced by unendurable pain. At the beginning of March, 1860, I was well enough to be able to travel to Berlin where I awaited the completion of my cure."

This was some nine months from the time of the application of the blister. These events occurred eleven years before the occurrences which lead up to the alteration of the famous Ems telegram by Bismarck.

Had Bismarck died from the effects of the application of the blister, as he so nearly did, who knows but that the fate of Europe might have been changed.

Yours truly,

WILLIAM PEARCE COUES, M.D.

RECENT DEATHS.

DR. WILLIAM P. HURLEY of South Boston died recently at the City Hospital after a short illness. Dr. Hurley was 33 years of age and a graduate of Tufts Dental School. He is survived by three brothers.

DR. THOMAS JEFFERSON BUCHANAN died on July 15, at Tom's River, New Jersey, as a result of x-ray burns suffered fifteen years ago while experimenting on malignant growths. Dr Buchanan was 61 years old. He was a graduate of Jefferson College and devoted a great part of his life to work in Jefferson Hospital and at the Jefferson Medical College. He is said to have been the first physician at Jefferson Hospital to experiment with the x-ray. Dr. Buchanan served at the Tom's River Hospital for about five years. During the war he served as medical inspector of the United States Coast Guards in New Jersey and as a chief medical examiner. Dr. Buchanan was the author of a number of monographs on medical and surgical subjects, among which are "X-Ray Experiments," and "Experiments with the Dr. Behrs Treatment." He was one of the first physicians in the United States to use the Dr. Behrs treatment in the cure of cancer.

The control of

Rheumatic Pain

by the application of

K-Y ANALGESIC

("*The Greaseless Anodyne*")

will be found a valuable adjunct to your internal treatment. Repeat as often as necessary. Always wash off previous application

Samples on request

Mention this Journal

Headache and Neuralgia

are relieved by the rubbing in of

K-Y ANALGESIC

"The Greaseless Anodyne"

"A safe, harmless way that works most of the time"

Samples on request

Mention this Journal

In Your Last Confinement Tear

what would you have given to have had a

"Van Horn"

Obstetrical Suture

(Chromic Catgut)

in your bag?

You could have put your stitches in quickly, conveniently, safely. Why not be prepared for your next confinement tear?

Get one of these sutures from your dealer

No samples

Effective Surgical Lubrication

is assured by the use of

K-Y LUBRICATING JELLY

Contains no grease, soluble in water, easily removed, does not stain the skin or clothing. Non-irritating, soothing and emollient.

Samples on request

Mention this Journal

Johnson & Johnson

NEW BRUNSWICK, N. J., U.S.A.

TO LET

An unusual physician's office with smaller group. Continuous hot water, heat, light, telephone, appointment and reception room service. On Commonwealth Ave., near Dartmouth St., Boston.
Tel. B. B. 1230
or address
A232, Care of
Boston Medical and Surgical Journal
24-tf

WANTED

Trained nurse as x-ray technician for private office of medical roentgenologist, New York City. Must have several years' x-ray experience, superior ability. Also one less experienced desiring postgraduate work. State in detail age, education and experience, salary expected.
APARTMENT I D
104 East 40th St., New York City
23-tf,B298

FOR SALE

Campbell standard x-ray coil, cabinet, tube stand. Price $50.
BUTLER METZGER, M.D.,
41 Ocean St., Lynn, Mass.
3-3,B314

FOR SALE

Massachusetts $5000.00 country practice, with ideal home in best of community. Price $8000.00, $2500.00 cash. Address
A240, Care of
Boston Medical and Surgical Journal
4-tf

A VACANCY

exists upon the medical staff of the State Hospital for Mental Diseases at Howard, R. I. For further information address
ARTHUR H. HARRINGTON, M.D., Supt.
19-tfB287

PHYSICIAN'S OFFICE

For rent, physician's office at 222 Marlborough St. Apply to
Dr. H. B. EATON
Tel. B. B. 4260 5-tf,B316

FOR SALE

1 Bausch and Lomb microscope.
Campbell outfit No. 5, including x-ray, high frequency cautery, thermo-faradic and diagnostic light. Address
Dr. ROCCO BRINDISI
149 Richmond St., Boston
5-3,B317

WANTED

1 Baker Static (Baby) Machine.
1 Victor Multiplex Machine.
1 Victor Galvanic Control.
No objection if they need repairing if the price is right. Address
A. U. F. CLARK
Hollis Center, Maine
5-1,B315

SPECIALIST

of excellent standing may have office at 362 Commonwealth Av. Steam heat, electric lights, janitor service, hot and cold water, twenty-four hour telephone service, and secretary service. Address
A242, Care of
Boston Medical and Surgical Journal
4-2

TO LET

Office rooms on first floor, excellent location, associated with physician doing large general practice. Fine opportunity for a man beginning eye, ear, nose and throat, or dentist. For particulars address or telephone,
Dr. J. E GILLIS
1109 Broadway, West Somerville, Mass.
Telephone Somerville 1439 5-2,B319

WANTED

Post-graduate student or capable physician to take charge of doctor's general practice while he is away for several weeks. Address or telephone
Dr. J. E. Gillis
1109 Broadway, West Somerville, Mass.
Telephone Somerville 1439 5-2,B318

"NEVERSSLIP" LABEL (RUBBER)

guards "POISON" Bottle, By **Touch** and Sight. Fits any bottle NECK. No more giving Poison "By Mistake." For Home and Laboratory. Sample 25c.
GUARDS AGAINST PICKING UP THE "WRONG" BOTTLE IN THE DARK, WHEN HALF AWAKE
"NSS" Sales Co., Mfrs., Wenona, Ill., U.S.A.
2-12,B312

PHYSICIANS

Advise the parents of that mentally deficient boy patient of yours to send him to an experienced Maine woman for a mother's care and training. For particulars apply to
BOX 154, POWNAL, MAINE
5-tf.B260

Probilin Pills
BILIARY AND HEPATIC

Fifteen years of extensive universal use of Probilin Pills have demonstrated that by early diagnosis and logical medical treatment a great many gall stone cases can be prevented from reaching the stage of indispensable surgical intervention.

Indispensable operation.

That's the point.

So many are performed that are not.

Probilin Pills literature on request.

MADE IN U.S.A.
FURNISHED SIXTY IN AMBER VIAL WITH GREEN LABEL AND RED SEAL AT BEFORE-THE-WAR PRICE.
SCHERING & GLATZ, INC. NEW YORK

Buy W S S

TRADE MURDOCK'S MARK
Mufood

A Diet of
Milk-Eggs-Malt Extract
Murdock Liquid Food Co.
BOSTON, MASS.

BOURNEWOOD HOSPITAL

SOUTH STREET, BROOKLINE, MASS.

Established 1884

For a limited number of cases of Mental and Nervous Disease only
Post Office, Chestnut Hill. Telephone, "Bellevue" 300.
Nearest station, Bellevue, N.Y., N.H., & H. R.R.

GEORGE H. TORNEY, M.D.
Physician in Charge

HENRY R. STEDMAN, M.D.
Consultant

CHANNING SANITARIUM, Inc.

Wellesley Avenue, Wellesley, Mass.

(Established in Brookline, 1879. Transferred to Wellesley, 1916.)

Seven new buildings on fifty acres of high woodland. Sleeping porch and private bath for each patient. Large and small suite cottages. Separate buildings for men and women. Facilities for occupation and diversion. Complete equipment for Vichy, Nauheim and electric baths and other forms of hydrotherapy. Alpine lamp for heliotherapy.

Especially designed and equipped for the care and treatment of nervous cases.

DONALD GREGG, M.D. WALTER CHANNING, M.D.

For Sale — Sanitarium

Wonderfully furnished and thoroughly equipped Sanitarium, 15 minutes from Boston, on hill overlooking beautiful panoramic view of Boston and surrounding suburbs, accommodating 20 patients. There are suites, sleeping porches, and private baths. Hardwood throughout. New. In every way desirable for exclusive use of a few physicians for their most refined and exacting patients.

For particulars address

A241, BOSTON MEDICAL AND SURGICAL JOURNAL
126 MASSACHUSETTS AVENUE, BOSTON, MASS.

THE STORM BINDER AND ABDOMINAL SUPPORTER

(PATENTED)

Adapted to use of Men, Women, Children and Babies

Modifications for Hernia, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, Ptosis, Obesity, Pregnancy, Pertussis, etc.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours.

KATHERINE L. STORM, M.D., 1541 Diamond Street, **Philadelphia**

Professional Cards

RING SANATORIUM AND HOSPITAL

Inc.

Arlington Heights, Massachusetts

Eight Miles from Boston
Telephone, Arlington 81

For Chronic, Nervous and Mild Mental Illnesses. Five separate houses permit of segregation and a variety of accommodations.

Boston Office—By appointment
496 Commonwealth Ave.
Telephone, Back Bay 8774
ARTHUR H. RING, M.D.,
Superintendent.

Devereux Mansion

MARBLEHEAD, MASSACHUSETTS

Not a Sanatorium. A pleasant country house where people in need of physical and nervous reconstruction find opportunity for carefully regulated work and rest. No mental cases received. Address

HERBERT J. HALL, M.D.

Dr. Mellus' Private Hospital

FOR MENTAL DISEASES

419 Waverley Avenue, Newton, Mass.
Reached by train to Newton, or by electric cars *via* Commonwealth Avenue to Grant Avenue.

Edward Mellus, M.D.

DR. TAYLOR'S PRIVATE HOSPITAL

For the Treatment of
NERVOUS DISEASES
AND
ALCOHOLISM AND DRUG ADDICTIONS

House newly equipped and furnished, skilled attendants, good food, and comfortable rooms at moderate rates.

Methods of treatment are those proved best after 17 years' successful experience.

FREDERICK L. TAYLOR, M.D.
45 Centre Street, Boston
(Near Eliot Square) (Roxbury District)

ROCKVIEW

A restful home for invalids and elderly persons, especially for the building up of convalescents amid attractive surroundings. Spacious piazzas, well stocked library, trained attendants.

MARY E. H. SPINNEY
17 Parley Vale, Jamaica Plain, Mass.
Tel. Jamaica 2280

Professional Cards

Wiswall Sanatorium

A Sanatorium for the Treatment of Nervous and Mental Diseases

New Buildings, every facility for comfort; in midst of twelve acres of high land, covered with beautiful oak and pine trees, fully equipped for hydrotherapeutic and electrical treatment.

H. O. SPALDING, M.D.,
Superintendent
E. H. WISWALL, M.D.,
Asst. Physician
Wellesley, Mass.
Telephone, Wellesley 261

GIVENS' SANITARIUM, INC.

(50 minutes from New York City)

Offers excellent opportunities for the treatment of

Nervous and Mild Mental Diseases

and has separate, detached cottages for persons who desire perfect privacy and pleasant surroundings, and who are addicted to the use of STIMULANTS and DRUGS.

The Sanitarium is located on a hill overlooking Stamford, Long Island Sound. Address

THE STAMFORD HALL COMPANY
Stamford, Conn.

FRANK W. ROBERTSON, M.D.,
President and Medical Superintendent

WOODSIDE COTTAGES

FRAMINGHAM, MASSACHUSETTS

A small sanitarium, pleasantly located on high ground, especially adapted to the care of chronic invalidism, rest cases, convalescents, and the aged. Separate groups. Committed cases not received.

Tel. Framingham 26.

FRANK W. PATCH, M.D.

GLENSIDE

For Nervous and Mental Diseases

6 Parley Vale,
Jamaica Plain, Mass.

MABEL D. ORDWAY, M.D.
Telephone, Jamaica 44

Professional Cards

HERBERT HALL HOSPITAL, Inc.

WORCESTER, MASS. Established in 1872

A Hospital for the Care and Treatment of those afflicted with the various forms of Nervous and Mental Diseases. Accommodations for a few chronic quiet patients at special rates.

WALTER C. HAVILAND, M.D., *Superintendent*
H. LINCOLN CHASE, M.D., *Resident Physician*

PINEWOOD REST

ARLINGTON HEIGHTS, MASS.

HOME SANITARIUM

Treatment for Nervous Diseases, Rheumatism, Kidney, Diabetes, Invalids and Chronic Cases.

For information and booklet address

53 Appleton Street
Arlington Heights, Mass.
Tel. 51940 Arlington

P. E. DEEHAN, M.D., Medical Director

"BELLEVUE"

Superior homelike accommodations for five patients. Nervous and Mild Mental Disease, selected cases of Alcoholism, and Elderly Women for whom medical supervision is desired, are received.

MARY W. L. JOHNSON, M.D.
158 WALCOTT ROAD, CHESTNUT HILL, MASS
Telephone, Brookline 5881-W.

THE MILLET SANATORIUM FOR TUBERCULOSIS

EAST BRIDGEWATER, MASSACHUSETTS
C. S. MILLET, M.D., MEDICAL DIRECTOR

The Boston office of the Millet Sanatorium, East Bridgewater, Massachusetts, has been removed to

45 BAY STATE ROAD

Dr. Millet may be seen at this office on Tuesdays and Fridays between the hours of 11 and 1 o'clock.

TUFTS COLLEGE MEDICAL AND DENTAL SCHOOLS

The Tufts College Medical School offers a four-year course leading to the degree of Doctor of Medicine. The next session begins September 16, 1920. Students of both sexes are admitted upon presentation of an approved high school certificate and, in addition, college credit indicating two years' work in Chemistry, English, Physics, Biology, and French or German.

CHARLES F. PAINTER, M.D., *Dean.*

The Tufts College Dental School admits graduates of accredited high schools on presentation of their diploma and transcript of record covering fifteen units.

Well-equipped laboratories and abundant clinical facilities furnish opportunity for a thoroughly practical course in medicine and dentistry.

WILLIAM RICE, D.M.D., *Dean.*

For further information, apply to FRANK E. HASKINS, M.D., *Secretary*, 416 Huntington Avenue, Boston, Mass.

THE NEW YORK EYE AND EAR INFIRMARY
School of Ophthalmology and Otology
For Graduates of Medicine

Clinics daily by the Surgical Staff of the Infirmary. Special courses in Ophthalmology, Refraction, Operative Surgery of the Eye and Ear, Pathology and External Diseases of the Eye.

The abundant clinical material of this well-known institution affords students an unusual opportunity for obtaining a practical knowledge of these special subjects. Two vacancies in the House staff exists in March, July, and November of each year. For particulars address the Secretary,

DR. GEORGE S. DIXON, NEW YORK EYE AND EAR INFIRMARY.

THE BOWDOIN MEDICAL SCHOOL

ADDISON S. THAYER, *Dean*
10 DEERING ST., PORTLAND, ME.

The Jefferson Medical College
OF PHILADELPHIA

Ninety-Sixth Annual Session Begins September 22, 1920, and Ends June 4, 1921

FOUNDED 1825. A CHARTERED UNIVERSITY SINCE 1838. One of the oldest and most successful medical schools in America. Graduates number 13,824, over 5,000 of whom are active in medical work in every State, and many foreign countries.

ADMISSION: Not less than two college years leading to a degree in science or art, including specified science and language courses.

FACILITIES: Well equipped laboratories; separate Anatomical Institute; teaching museums; free libraries; unusual and superior clinical opportunities in the Jefferson Hospital, Jefferson Maternity, and Department for Diseases of the Chest, all owned and controlled by the College, together with instruction privileges in six other hospitals.

FACULTY: Eminent medical men of national reputation and unusual teaching ability.

ABUNDANT OPPORTUNITIES for graduates to enter hospital service and other medical fields.

Circular Announcements descriptive of the Courses will be sent upon request.

ROSS V. PATTERSON, M.D., DEAN.

BOSTON UNIVERSITY SCHOOL OF MEDICINE

Founded 1873

REQUIRES FOR ADMISSION a minimum of two pre-medical college years including Chemistry, Physics, Biology, and, in addition to English, at least one foreign language.

REQUIRES FOR GRADUATION a minimum of four years of graded medical studies.

THE SCHOOL OFFERS: 1. A graded five-years' course, including hospital internship; 2. A six-year combination course with the College of Liberal Arts of Boston University, whereby a successful candidate may obtain the degree Sc.B., and the M.D.; 3. Eligibility to the Graduate School of Boston University to courses leading to the degree of Ph.D.; 4. A diversified curriculum covering the entire range of modern medical practice, including physiologic and homeopathic materia medica and therapeutics; 5. Unusually extensive facilities in the Boston City Hospital, Massachusetts Homeopathic Hospital, Haynes Memorial for Contagious Diseases, Robinson Maternity, Evans Memorial for Clinical Research and Preventive Medicine, and the Westboro State Hospital for the Insane.

Information gladly furnished on application to the Registrar,
EDWARD E ALLEN, M.D., 80 East Concord St., Boston.

GRAND VIEW SANITARIUM AND HOSPITAL
547 Central Street, Winchendon, Mass.

A Modern Health Resort for Convalescent Cases, Semi-Invalids, and General Medical and Surgical Work. Beautifully located with views of Monadnock in the north and Wachusett in the south. Pine grove. Rates moderate.

Licensed Lying-in Hospital. Confinements a specialty.

Doctors' private patients will receive our special care.

Write for particulars.

Julia A. Nason, R.N., Supt. Howard N. Nason, M.D., Physician

SYRACUSE UNIVERSITY
COLLEGE OF MEDICINE

ENTRANCE REQUIREMENTS: Two years in a registered College or School of Science. Combination courses recognized.

LABORATORY COURSES in well equipped laboratories under full time teachers.

CLINICAL COURSES in the University Hospital, one general, one special, and in the municipal hospitals and in the dispensary adjoining the college, in all of which senior students serve as clinical clerks. Tuition $200.

Address The Secretary of the College of Medicine, 307 Orange St., Syracuse N. Y.

BOSTON NURSES' CLUB, Inc., AND REGISTRY
839 BOYLSTON ST., BOSTON, MASS.

BACK BAY 8787

SWITCHBOARD WITH TWO TRUNK LINES

Graduate Nurse in attendance day and night.

Graduates, Undergraduates, Attendants, Hourly Nursing Masseurs, Male Nurses.

MRS. GRACE H. TOWER, R.N., REGISTRAR

WET NURSES NEEDED

to fill increased demand at

WET NURSE DIRECTORY

Under the direction and control of the Infants' Hospital. Wet nurses may be obtained by telephoning to

THE DIRECTORY, Brookline 2930

HARVARD DENTAL SCHOOL
BOSTON, MASS.

Fifty-second Year begins Sept., 1919.
A department of Harvard University.
Send for Announcement
A four-years' course
DR. EUGENE H. SMITH, *Dean*

CLINICAL CHART OF RENAL DISEASES
By H. S. Jelatian, M.D., of Boston

Student and practitioner alike will appreciate this concise tabulation. For wall or desk. 15 x 10 inches. 25 cents.

Boston Medical and Surgical Journal
126 Massachusetts Ave., Boston 17, Mass.
tf

WOODLAWN SANITARIUM

FOR THE CARE OF EPILEPTICS

DR. H. W. HAMMOND, *Supt.*
WEST NEWTON, MASS.
tf

RADIUM

STANDARD CHEMICAL CO.

OUR Institution is prepared to supply Radium of highest purity in any necessary quantity.

Tube and needle applicators
for deep therapy.

Patented glazed plaques
for dermatological conditions.

Apparatus for radium emanation.

U. S. Bureau of Standards Certificate.

Our Departments of Physics and Medicine are prepared to give instruction in the physics and therapeutic application of Radium.

RADIUM CHEMICAL CO.
PITTSBURGH, PA.
BOSTON CHICAGO SAN FRANCISCO
NEW YORK

If It Is Electrotherapeutic Apparatus We Have It
and
If It Is The Best We Have It

We carry a full line of Electric Light Bath Cabinets and Bakers, High Frequency Machines, Sinusoidal, Galvanic, and Faradic Outfits, etc.

We can give you the LATEST and BEST in X-ray equipments of any size complete with COOLIDGE accessories.

To physicians in New England who are using the VanHouten and Ten Broeck Static Machines we can give full service both for repair work and new equipment, as we have taken over the manufacture of these machines.

If you are in the market for any equipment it will pay you to write us.

Thomas B. Snow

212 East 23rd Street New York City

"An Assistant In the House"

"For a good many years," says one of the country's most successful practitioners, "I have made a practice of advising my patients to keep a bottle of

Dioxogen

constantly in the house to meet the hundred and one minor injuries or hygienic needs continually arising. As an all 'round antiseptic I know of nothing better or safer than a good peroxide of hydrogen —and in my experience the best and safest peroxide of hydrogen is Dioxogen.

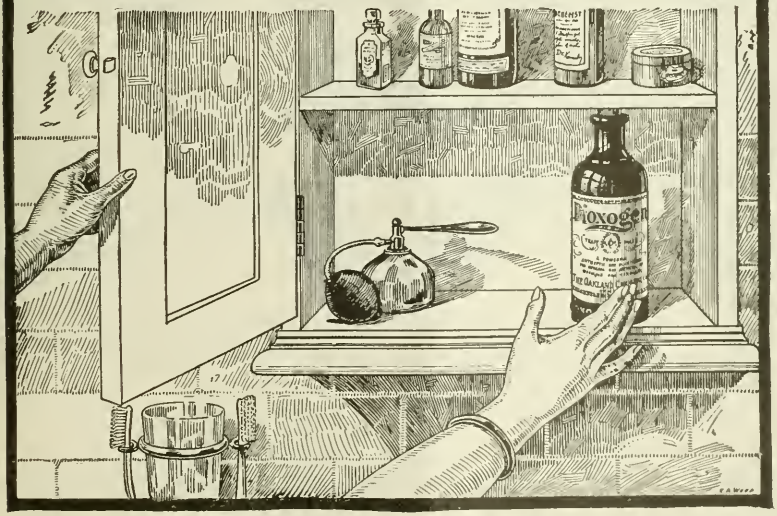
When I tell a patient to use it, I do not have to ***wonder*** if it will do what I want it to, nor ***worry*** that it may prove toxic or harmful.

No, Dioxogen does not belong to the "wonder and worry" class of disinfectants. On the contrary, it is a trustworthy, non-toxic antiseptic that medical men can confidently recommend whenever a germicidal or prophylactic agent is required.

This is why I advise my patients to always keep Dioxogen in the medicine cabinet, for in addition to its exceptional value for all routine hygienic purposes, in the case of emergency wounds its prompt and liberal application will assure abundant protection against germ infection until I get there. *It is like always having a dependable assistant in the house.*"

THE OAKLAND CHEMICAL CO.

59 Fourth Avenue, **New York City**



ARSPHENAMINE (ARSENOBENZOL)
AND
NEOARSPHENAMINE

It has been the policy of our laboratories to keep the medical profession informed of the result of research work in syphilis. We have recently established the fact by extensive investigation on animals that *arsphenamine is* 1¾ *times more sterilizing* for the trypanosome of horse syphilis ("la dourine") in white rats than *neoarsphenamine.*

These figures are in remarkable consonance with results of Castelli's work abroad on the organisms of relapsing fever, hen spirillosis and experimental syphilis in the rabbit.

We have furthermore determined that arsphenamine is 2½ *more toxic in the white rat than neoarsphenamine.* This gives neoarsphenamine a better therapeutic index than arsphenamine.

It is necessary to confirm these results by systematic and prolonged investigations on syphilis in man. For this purpose it is essential to compare the serologic results in 100 cases of secondary syphilis treated with arsphenamine alone with a similar number of cases treated with neoarsphenamine alone. These studies are under way and the results will be reported in due time.

On account of the fact that neoarsphenamine is better tolerated by patients than arsphenamine, we tentatively prefer it but we employ more frequent injections (at least twice a week), than has been the practice with arsphenamine.

Our recent make of neoarsphenamine is ideal in all respects.

DERMATOLOGICAL RESEARCH LABORATORIES
(Incorporated as an Institute for Medical Research)
1720-22 Lombard St., Philadelphia

LOESER'S INTRAVENOUS SOLUTIONS

A Pharmacist's Contribution to Progressive Medicine

Sterile stable solutions of U. S. P. and standard salts prepared by a rigid laboratory method so as to be acceptable to the blood stream.

For the progressive physician seeking improved clinical results.

Send for reprints and list of intravenous solutions.

NEW YORK INTRAVENOUS LABORATORY

Producing Ethical Intravenous Solutions for the Medical Profession Exclusively
100 WEST 21st STREET, NEW YORK CITY

"One need not follow the 'isms' of the Faddist to be up-to-date."

Medicine has its fads. But experience, after all, has the last word. Experience points to the fact that mercury and iodide cannot be dispensed with in the treatment of Lues. "Mixed treatment" in syphilis is coming back into almost routine use in connection with the use of arsenic compounds.

PIL MIXED TREATMENT (Chichester)

supplies the need for a dependable form of Hg. and I.

Because:

Uniformity of composition and purity of content assure maximum effect. The combined action of mercury and iodine is secured in one agent, making for economy and ease of administration. Accurate adjustment of dosage to each individual case is facilitated, without buccal, gastric or intestinal disturbance.

Samples and literature will be promptly sent to physicians on request.

Pil Mixed Treatment (Chichester) is put up in bottles only. Price $1.00.

HILLSIDE CHEMICAL COMPANY

Newburgh, N. Y., U. S. A.

Our advantages make us headquarters for the organo-therapeutic products

The Importance of a Hematinic in Syphilis

Practically every case of syphilis at one stage or another, suffers from the destructive influence of the virus on the corpuscular elements of the blood stream. The plan of treatment of most physicians embraces a blood maker, and the QUICK RESPONSE OF SYPHILITIC CACHEXIA to

Extract of Red Bone Marrow
(Medullary Glyceride)

indicates that its selection for the purpose is most logical.

Prepared from fresh red bone marrow—the function of which seems to be the regeneration of blood corpuscles—this product may be depended upon as an effective blood builder and flesh maker.

Literature to Physicians on Request

ARMOUR & COMPANY
CHICAGO

Armour's

Sterile Surgical Catgut Ligatures—plain and chromic—regular (60-inch), emergency (20-inch), sizes 000 to No. 4 inclusive, are smooth, strong, and "just what a ligature should be"

LABORATORY PRODUCTS

A LARGE VARIETY OF MODELS, MAKING IT POSSIBLE TO SELECT THE PROPER PATTERN FOR ANY CONDITION REQUIRING ABDOMINAL SUPPORT. MADE TO ORDER AND CORRECTLY FITTED.

POMEROY COMPANY - 41 West St., Boston

SEPARATE DEPARTMENTS FOR MEN AND FOR WOMEN, WITH EXPERIENCED ATTENDANTS IN CHARGE. PHYSICIANS APPROVE OF OUR SERVICE BECAUSE IT INCLUDES FILLING PRESCRIPTIONS BY SUPPLYING THE KIND OF SUPPORT DESIRED.

WHEN NOT CONVENIENT TO SEND YOUR PATIENTS TO OUR FITTING ROOMS, WRITE FOR ORDER BLANKS AND DIRECTIONS FOR TAKING MEASUREMENTS.

PRESS OF JAMAICA PRINTING COMPANY, BOSTON, MASS.